

1987

The impact of coping resources and strategies upon health: an analysis of age and sex differences

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THE IMPACT OF COPING RESOURCES AND STRATEGIES UPON HEALTH:
AN ANALYSIS OF AGE AND SEX DIFFERENCES

Iowa State University

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The impact of coping resources and strategies upon health:

An analysis of age and sex differences

by

Gale Ellen West

A Dissertation Submitted to the
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Requirements for the Degree of
DOCTOR OF PHILOSOPHY

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TABLE OF CONTENTS

	Page
CHAPTER I. INTRODUCTION	1
Statement of the Problem	1
Research Objectives	4
Scope of the Study	4
Dissertation Overview	5
CHAPTER II. LITERATURE REVIEW	6
History of the Stress Concept	6
Origins of the stress-response paradigm	6
Stress, resources and health	10
Stress, strategies and health	13
Critique of research on strategies	17
Perspectives on Coping Strategies	20
Cognitive-interactionist perspective	24
Proposed Factors in Coping	28
Level of stress	28
Sex and age	30
Sex differences	30
Age differences	34
Status characteristics	40
Education	40
Occupational status	40
Marital status	43
Psychological characteristics	44

Social integration	44
Religiosity	46
Perceived social support	47
Implications	52
CHAPTER III. THEORY AND HYPOTHESES	55
Theoretical Framework	55
Toward a Model of Coping	59
Hypotheses of the Model	61
CHAPTER IV. METHODS	74
Sample and Data Collection	74
Sample Characteristics	76
Operationalization of Concepts	77
Health	78
Stress	79
Sex and age	81
Education	81
Occupational status	82
Marital status	83
Social integration	83
Religiosity	84
Social support	84
Coping strategies	85
Statistical Procedures	87
CHAPTER V. FINDINGS	93
Crosstabulation Analyses	93

Correlational Analyses	96
Direct Effects	108
Buffering Effects	112
Analysis of Coping Strategies	120
CHAPTER VI. DISCUSSION	126
Implications	144
Suggestions for Future Research	148
REFERENCES	153
ACKNOWLEDGEMENTS	171
APPENDIX A: OPERATIONALIZATION OF VARIABLES	172
APPENDIX B: ANALYSIS OF MISSING RESPONDENTS	177
APPENDIX C: STRESS INTERACTION CORRELATIONS	178

CHAPTER I. INTRODUCTION

Currently, interest in stress and coping appears to be at an all time high in both popular and scholarly literature. Documentation of negative effects from high levels of stress has been firmly established in a number of scientific fields of inquiry, including medicine, psychology and psychiatry, sociology, and even economic studies of worker productivity. However, the quest for ways to ameliorate debilitating stress effects may be outstripping our ability to understand the nature of the coping process. Before any 'cures' for the negative effects of stress are strongly espoused, it would be beneficial to examine not only what variables appear to moderate stress effects, but also how those variables function as stress moderators. The current study focuses on the issue of how social and psychological variables may intervene in the coping process through their relationship with the actual strategies used to cope with stress.

Statement of the Problem

As originally conceived, stress was the direct response of the physical body to an environmental demand (Selye, 1936). This conception led to the development of a very simplistic model of coping directly linking stress to health outcomes. As the basis for initial research on coping, this

model conceptualized stress as any life change that would require an individual to readjust their daily routine (Holmes and Rahe, 1967). A substantial number of studies using this model of coping were conducted during the 1960s. These studies appear to have confirmed a relationship between high levels of stress and negative physical, as well as psychological, health outcomes (Dean and Lin, 1977; Dohrenwend and Dohrenwend, 1974; Rabkin and Struening, 1976; and Holmes, 1979).

The magnitude of the relationship between stress and health outcomes found in these studies, however, has been quite modest, indicating that while some people experience problems coping with stress, others do not. As a result, researchers have acknowledged that stress is actually a more complex process involving social and psychological resources which act to moderate the relationship between stress and physical and mental health outcomes. Studies in the 1970s focused on this expanded model of coping in which social and psychological resources were included as buffers between stress and health outcomes (Antonovsky, 1974; Cobb, 1974, 1976; Gore, 1978a, Rabkin and Struening, 1976).

These studies of social and psychological resources as stress moderators also yielded somewhat disappointing results. They continued to leave substantial amounts of the variance in health outcomes unaccounted for, and this once

again motivated stress researchers to expand the model of coping, this time to include coping strategies as moderators. Defined as the actual cognitions and behaviors used to master, tolerate, or reduce stress (Pearlin and Schooler, 1978), studies on coping strategies are relatively recent and few in number, and, they appear to be finding that the relationship between stress, strategies, and health outcomes approximates the modest findings from prior research on social and psychological resources as moderators (Andrews et al., 1978; Billings and Moos, 1981, 1984; Kessler, Price and Wortman, 1985; and Mitchell et al., 1983).

The continuing disappointment with findings from research on these hypothesized mediators or buffers of stress prompted Mitchell et al. (1983) to suggest that,

"It is time to shift away from the question of whether buffering effects exist toward a more detailed examination of the circumstances and ways in which support and coping play a role in the stress process" (p. 445).

To that end, this dissertation research is examining a model of coping in which social and psychological resources are viewed not only as stress moderators, but as factors which help to determine which coping strategies will be used to deal with stress. The emphasis is on how these resources may function to lessen the impact of stressful events by supporting or determining actual coping strategies, not merely on the degree to which their presence or absence may

buffer stress. Such a model of coping has been noticeably lacking in prior research.

Research Objectives

The purpose of this study is to address the lack of research on how different social and psychological characteristics of an individual might affect their coping strategies and in turn their health. The general objective of the study is to develop a better understanding of the relationships between psychological and social characteristics, coping strategies, and physical health. The more specific objectives of the study are: (1) to investigate the relationship between various coping resources, coping strategies and physical health, (2) to examine the relationships between various coping resources and coping strategies, and (3) to examine the extent to which all of the above relationships differ by sex and by age.

Scope of the Study

This research is based on a community case study of the adult population (aged 18 and over) of a small, midwestern, rural community (population 1,143 in 1980). The data were collected in the late fall of 1982 as part of a larger research project on the social and recreational activities of rural community residents. Telephone interviews were

conducted with a representative sample ($N = 285$) of the adult population.

Dissertation Overview

This dissertation is composed of five chapters in addition to the current one. Chapter II gives a brief historical review of previous research on stress, then presents an extensive review of the theoretical and empirical work dealing with strategies for coping with stress. Chapter III presents the study's conceptual model and states the hypotheses which will be tested in the dissertation.

Chapter IV provides detailed background information about the study and an overview of the empirical procedures used to test the hypotheses. It includes a complete description of questionnaire construction, sampling procedures, data collection, operationalization of the theoretical concepts, and the statistical procedures employed in the data analysis.

Following a section on the descriptive characteristics of the sample, Chapter V reports on the results of the statistical analysis. Chapter VI then reviews the major findings of the study and provides both an interpretation of the results and a discussion of their implications for clinical practitioners and for future research.

CHAPTER II. LITERATURE REVIEW

This chapter begins by briefly reviewing the history of stress research from the 1930s to present. Two major theoretical avenues of stress research are identified: life change/health change research (including research on coping resources as moderators between life change stress and health) and more recent research on the relationship between coping behaviors and health. Several theories regarding the origins of coping behaviors are then reviewed and critiqued, followed by a review of prior research on the determinants of coping strategies. Finally, the importance of continued research on coping strategies is highlighted in terms of its application to persons who are having difficulties dealing with stress.

History of the Stress Concept

Origins of the stress-response paradigm

The concept of a stress response has often been credited to Selye's work in the 1930s. He was studying what he then called an "adaptation syndrome" (Selye, 1936). By performing experiments on various animals, he found that they responded in a stereotyped manner to a variety of "nocuous agents." Since the responses were the same even though the agents were different, Selye concluded that the common element of the agents which produced these stereotyped re-

sponses was that they placed the body in a state of stress. Simply put, stress was "the non-specific response of the body to any demand" (Selye, 1979, p. 12). Selye later elaborated on what he termed the "General Adaptation Syndrome." According to Selye, this syndrome occurs in three stages. First is the "alarm reaction" stage which begins upon exposure to a stressor. This stage induces an initial "shock phase" followed by a "counter shock phase" in which there is a mobilization of defensive resources. Second is the "stage of resistance" in which defensive forces remain constant and adaptation usually occurs. Lastly, however, there may come a "stage of exhaustion" when the stressor is so severe or occurs over such a long period of time that adaptation efforts are exhausted (Selye, 1979).

Initial research on stress focused on the physical responses of the nervous and adrenal systems within an organism, and, according to Selye (1979), it was not until the 1950s that researchers began to adapt the concept of stress and the General Adaptation Syndrome to psychological responses in humans. From the psychological point of view, an excess or an insufficient amount of environmental stimulation (i.e., stress) leads not only to bodily reactions, but also eventually to psychological reactions which may be pathogenic, for example neuroses, depression, etc. These

psychological reactions, however, were seen to occur as a result of the body's initial maladaptive responses.

While recent advances have shown possible genetic or biochemical bases for chronic mental illness, the majority of community-based mental health problems are today presumed to stem, not from maladaptive physical reactions to stress, but rather from an individual's failure to adapt to environmental changes (Andrews et al., 1978). Initial psychological studies of stress focused on experimentally induced physical or mental stress responses. The results of these studies were then often generalized to the supposed effects of stressors encountered in normal interaction with the environment. For the most part, environmental stress has been conceptualized as events which occur in the course of daily living which require some adjustment on the part of an individual. This conception of stress is implied in the life change/health change model of stress which was popular in the late 1960s and early 1970s. This model has been used to study actual normative stress rather than experimentally induced stress.

In the model, life change stressors are defined as any set of circumstances, desirable or undesirable, that require a change in an individual's everyday routine (Holmes and Rahe, 1967). Holmes and Rahe developed the "Schedule of Recent Experiences" (S.R.E.) which attempts to measure not

only the number of life change stressors an individual might be experiencing, but also the cumulative amount of stress they may be facing. The S.R.E. is a list of 42 events both desirable and undesirable which are weighted with regard to the amount of social readjustment required to live through each event. Stressor events include such things as change in residence or work responsibilities, marriage, separation or divorce, death or illness, and so on. Theoretically, these life change events are said to require a significant amount of social and psychological readjustment and adaptation which can lead to negative health changes. As Johnson and Sarason (1978) note,

"Given the physical and psychological demands involved in coping with high levels of life change, it is not surprising that many clinicians have suggested that the experiencing of major life changes can have a deleterious effect on the functioning of the individual" (p. 206).

In fact, since Holmes and Rahe's (1967) initial attempts to quantify the impact of life changes on an individual's health, a virtual flood of literature, both retrospective and prospective, has been generated linking the occurrence of stressful life events to negative physical and psychological health outcomes (Kessler, Price, and Wortman, 1985; Tennant, 1983). These studies provide substantial support for the contention that individuals who experience a disproportionate number of major life changes are particu-

larly susceptible to develop negative mental or physical health changes (Dean and Lin, 1977; Dohrenwend and Dohrenwend, 1974, 1981; Rabkin and Struening, 1976; Holmes, 1979; and Thoits, 1983). While these studies are not conclusive they do give weighted credence to Holmes and Masuda's (1974) contention that, rather than being related to specific disorders, life stress serves to increase one's overall susceptibility to negative health outcomes (much like Selye's original hypothesis of a non-specific response to stress).

Stress, resources and health

While the findings of life change/health change research have consistently found correlations between life changes and health, the magnitude of the correlations have been modest. Many individuals experiencing substantial life change have not shown negative health symptoms, while other individuals experiencing relatively modest levels of life change stress have developed symptoms (Hinkle, 1974; Gore, 1978a). Thus, life event stress accounts for a relatively small proportion (usually not more than ten percent) of the variance in measures of health, and, when considered by itself, it is not very useful for purposes of predicting who will or will not become ill (Andrews et al., 1978; Rabkin and Struening, 1976; Thoits, 1983).

In addition to the original model's poor ability to predict health outcomes, Andrews et al. (1978) denounced its continued study as a "doomsday exercise without strong public health implications" since the majority of life change events cannot be ameliorated by public health services. However, these researchers hailed the study of moderators as having "considerable therapeutic implications" (p. 308), noting that the proposition that moderating resources, especially social support, could reduce the effects of stress has long been a fundamental tenet in the theory and practice of crisis intervention (Heller and Swindle, 1982). To clinicians, the significance of studying stress and coping is to identify the relative importance of the various methods of treatment and prevention and not so much the prediction of negative health outcomes. As a result, the initial life change/health change model was modified to include "coping resources" that were hypothesized to moderate the relationship between life change stress and health (Antonovsky, 1974; Cobb, 1974, 1976; Gore, 1978a, Rabkin and Struening, 1976).

In the modified life change/health change model, coping resources are hypothesized to buffer against the disequilibrating effects of life change events by: (1) facilitating behaviors that enable one to effectively deal with the objective characteristics of the situation encountered, or

by, (2) facilitating a reduction in the negative affects generated by the situation through the use of intrapsychic defenses and comforting cognitions that produce a less threatening interpretation of the event (Lazarus, 1976; Mechanic, 1978). Moderators then include two broad factors, the buffering effects of an individual's internal ability to cope with stress (physically and psychologically) and the material and social supports available to an individual who is attempting to cope with a stressor (Rabkin and Streuning, 1976).

Even though hypothesized moderators could include any number of different material and psychological resources, the majority of studies to date have focused on the role that social supports play in moderating the debilitating effects of stress (Cassel, 1976; Heller and Swindle, 1982; Henderson, 1977; Kessler, Price, and Wortman, 1985). While many of these studies have indeed revealed a "stress buffering" relationship between the presence of adequate social supports and various indicators of health (Boyce, 1981; LaRocco, House, and French, 1980; Wilcox, 1981), there are others that have found only direct effects (Pearlin et al., 1981; Schaefer, Coyne, and Lazarus, 1981; Williams, Ware, and Donald 1981).

More importantly, these studies of social supports have been unable to determine whether the absence of social

supports precedes or results from an individual's negative response to stress (Thoits, 1982). For example, poor copers may lack the social skills needed to develop and use social resources as buffers, or their poor stress reactions may actually erode what social resources they have (Billings and Moos, 1984). Some longitudinal studies, however, have begun to support a moderator role for social supports in the life change/health change model (Billings and Moos, 1982a, 1982b; Williams et al., 1981). While several studies have addressed the stress moderating effects of other psychological and material resources in the coping process, such as locus of control, religiosity, health, and income (Haan, 1982; Moos and Billings, 1982; and Menaghan, 1983b), additional studies are still needed to determine their relationship with negative health outcomes.

Stress, strategies and health

While studies on moderators have found that coping resources often do seem to have positive effects on health, their influence on the ability to predict health has been less than desirable. As noted previously, a debate over whether the presence or absence of coping resources precedes or results from the occurrence of stressful events has arisen which discounts the hypothesized "moderator" effects of coping resources (Billings and Moos, 1984). For example,

previous emotional difficulties may actually bring about negative life events, such as divorce or job loss, or may bring about a loss of the resources that are hypothesized to buffer the impact of life event stress, such as spouse or friends. The causal link between stressors, moderators, and health is then problematic for all research except that which employs longitudinal analyses (Dohrenwend et al., 1984).

Because of the debate regarding whether moderators actually intervene in the life change/health change model and because of the less than satisfactory results from studies employing this model, researchers have once again begun to modify their thoughts on what the critical theoretical and substantive issues in stress research are. Since the late 1970s and early 1980s, there has been an intensifying amount of interest in what has been termed 'coping strategies' (the actual cognitions and behaviors used to master, tolerate, or reduce stress), as opposed to coping resources (Pearlin and Schooler, 1978). Coping strategies are also hypothesized to act as moderators in the life change/health change relationship.

A large number of coping strategies have been identified and explored in the literature, including such strategies as problem-solving, information-seeking, distraction, tension reduction, and even the use of humor (Kessler,

Price, and Wortman, 1985). Many attempts have been made to classify strategies into conceptual domains (Moos and Billings, 1982). Although no typology is generally agreed upon, three dimensions of coping common to most of them include seeking to alter the problem directly (problem-focused coping), changing one's way of viewing the problem (appraisal-focused coping), and seeking to manage the emotional distress aroused by the problem (emotion-focused coping) (Moos and Billings, 1982; Pearlin and Schooler, 1978). These different modes of coping are generally not regarded as mutually exclusive; they can be applied simultaneously or sequentially to a given problem. In fact, one of these coping functions may be achieved at the expense of another (Lazarus and Launier, 1978). For example, someone may minimize their stress by using denial, thus delaying the use of other coping strategies and perhaps reducing their chances for more favorable outcomes.

Some researchers have found that people usually report using moderate levels of all types of coping when dealing with stress. Information-seeking, selective perception and positive comparison have been the most consistently reported coping strategies, while emotional-discharge has been reported least often (Billings and Moos, 1984; Folkman and Lazarus, 1980; Pearlin and Schooler, 1978). The use of active and problem-focused coping, such as logical analysis,

information seeking and affective regulation, has been associated with positive health outcomes, while the use of avoidance or indirect emotion-focused coping, such as denial or emotional discharge, has been associated with negative health outcomes (Billings and Moos, 1981, 1984; Pearlin and Schooler, 1978).

Some researchers have focused on coping responses to specific stressors, such as a major health problem or loss of job. Others have studied responses to the more general levels of stress measured by the life events inventory; yet others have grouped stressors into categories such as controllable versus uncontrollable, expected versus unexpected, positive versus negative, or entrance versus exit (Andrews et al., 1978; Dohrenwend and Dohrenwend, 1974; Folkman and Lazarus, 1980; Billings and Moos, 1981, 1984; McCrae, 1984). From Pearlin and Schooler's (1978) research there is some evidence that different coping strategies may be successful from one type of stressor to another, that flexibility in coping efforts may be more protective than possessing any one type of coping strategy, and that the most effective coping strategies appear to be used by males, the educated and the affluent.

Studies on coping with specific life crises have provided some evidence that coping strategies may be related to physical and mental health. For example, in her study on

marital stress, Menaghan (1982) found that 'optimistic comparison' was associated with lower mental distress, while 'selective ignoring' and 'resignation' actually increased ongoing distress. As a result, Kessler, Price and Wortman (1985) have suggested that future research should attempt to isolate coping responses which are linked to the successful management of stress encountered within different life domains, such as work, family, and health, rather than with an overall level of stress or a specific life crisis.

Critique of research on strategies

Recent studies have begun to find that coping strategies are related to health in approximately the same modest degree that previously hypothesized coping resources were and with a continuing degree of mixed findings regarding direct versus interaction effects (Andrews et al., 1978; Billings and Moos, 1981, 1984; Felton, Revenson, and Hinrichsen, 1984). For example, Andrews et al. (1978) found that level of stress and coping behaviors had only direct effects on health outcomes which were independent of the amount of stress experienced, perhaps indicating that simply possessing certain coping behaviors affects health. In contrast, Billings and Moos (1981) and Pearlin and his associates (1979, 1981) have found buffering (interactive) effects for various coping behaviors.

Much of the research to date has employed retrospective recall when measuring the coping strategies that were used in specific or general stressful situations. The results of such studies have been severely criticized since retrospective recall about how a person did or usually does cope may not reflect actual coping behaviors when under stress (Folkman and Lazarus, 1980). There is often a poor relationship between how people say they will behave and how they actually do behave in specific situations (Smith, 1982; Zimbardo, Ebbesen, and Maslach, 1977).

A debate has also recently arisen regarding the fact that many behaviors which have been called 'coping strategies,' such as eating, drinking, and sleeping, could also be construed to be the negative results of ineffective coping (Kessler, Price, and Wortman, 1985). Since most of the research on coping strategies has been based on cross-sectional data, the causal link between such strategies and outcomes has yet to be rigorously tested. Mitchell et al. (1983), in reviewing the recent literature on coping strategies as mediators in the life change/health change model, concluded that,

"As researchers have become more encompassing in their efforts to identify stress buffers, . . . patterns of mixed significant and nonsignificant findings have become more commonplace. It is time to shift away from the question of whether buffering effects exist toward a more detailed examination of the circumstances and ways in which support

and coping play a role in the stress process" (p. 445).

Likewise, Billings and Moos (1984) have called for,

"an expanded paradigm ... for considering individual coping responses to stressors and the availability of social resources that support the coping process and affect the severity of the disorder by mediating the impact of stressors" (p. 877).

The key here is that coping resources and strategies should no longer be regarded as 'magical' buffers between stress and health, but should be theoretically seen and researched as supporting a coping process. The emphasis of researchers would then be on how these supports function to lessen the impact of stressful events, not merely whether their presence or absence intercede in the life change/health change model.

As noted earlier, coping resources are hypothesized to buffer against the negative effects of life stress by facilitating behaviors or cognitions that allow an individual to deal effectively with the stress. This would suggest that coping resources may be directly linked to coping behaviors. This hypothesis begins to address the complex role that resources might play in the coping process; however, the relationship between resources and coping behaviors is, as yet, an unexplored avenue of inquiry.

This conception of coping behaviors has implications for the treatment of persons in mental health facilities.

Brown (1980) notes that in recent years mental health specialists have been shifting their counseling approach from 'psycho-therapy' to 'psychoeducation.' In the psychoeducational model of mental health counseling, educating clients to use self-regulatory skills, such as appropriate coping behaviors, is considered beneficial for the clients. For example, Brown (1980) attempted to educate clients about such hypothesized coping skills as progressive relaxation, anxiety management, social assertiveness, and self-reinforcement. While he did conclude that these skills resulted in lower levels of anxiety, fear, and hospitalization rates after training, these apparent benefits could be accounted for by experimenter bias or exaggerated self-reports. Exactly what coping behaviors should be taught for the successful management of stress cannot be clearly understood until further research on the origins, effectiveness, and appropriateness of different coping behaviors has been assessed.

Perspectives on Coping Strategies

According to Folkman and Lazarus (1980), there are three basic theoretical perspectives on the origins of individual coping strategies or behaviors. The first perspective is basically psychological, emphasizing ego processes. It defines coping as an unconscious defense system that is

responding to the internal conflicts caused by stress by reducing tension and restoring equilibrium (Haan, 1977). Since this conception of coping focuses on psychological ability to reduce tension, it has been criticized for failing to consider conscious problem-solving strategies which have been found to be important in the coping process (Janis and Mann, 1977; Mechanic, 1978; Murphy, 1974).

A second perspective on coping defines coping as the result of stable personality traits which generate coping responses (Lazarus et al., 1974). From this perspective, coping strategies are actually viewed as dispositional traits or habitual preferences, such as denial or perseverance. Relatively stable clusters of coping dispositions have been found by some researchers (Husaini et al., 1982; Kobasa et al., 1981; Kohn, 1977; Rosenbaum, 1984; Wheaton, 1982); others, however, have questioned the assumption that coping strategies are consistent across stressful situations (Folkman and Lazarus, 1980; Hirsch, 1981; Pearlin and Schooler, 1978).

Both Pearlin and Schooler (1978) and Folkman and Lazarus (1980) found that very few people are consistent in their coping strategies from one type of stressful situation to another. Folkman and Lazarus' (1980) study indicated that work-related stress was associated with the use of problem-focused coping, while health-related stress was

related to the use of emotion-focused coping. In their study, subjective appraisals of whether a situation was amenable to change accounted for the majority of the variability in the use of coping strategies across situations. The methodologies of both Pearlin and Schooler (1978) and Folkman and Lazarus (1980), however, have been severely criticized (Shinn and Krantz, 1981; Marshall, 1979; Gore, 1978b), indicating that additional research is needed before any conclusions can be drawn.

The personality perspective has also been criticized for not allowing situational circumstances to explain someone's coping response. For example, individuals are expected to deal with stress from the death of a spouse in the same manner as they would deal with being promoted at work. In contrast, the third perspective on strategies argues that coping efforts are determined primarily by the specifics of the situation causing the stress. As such, coping occurs only in response to the immediate stressful situations in which individuals find themselves--for example, illness (Moos, 1977), prelim exams (Mechanic, 1978), or bereavement (Parkes, 1972).

Studies from this perspective focus mainly on emotional coping responses to crisis situations, and have found these reactions to be extremely variable with no consistent effects on outcomes (Silver and Wortman, 1980). More recent

studies have begun to assess how different categories of stressors (controllable versus uncontrollable, work versus interpersonal stressors, or loss versus threat versus challenge stressors) systematically determine what coping strategies are used (Dohrenwend and Dohrenwend, 1974; McCrae, 1984; Pearlin and Schooler, 1978). The relationship between type of stressor and type of coping strategy, however, has been disappointingly modest. For example, McCrae (1984) was dismayed that of 28 hypothesized coping mechanisms, only 16 percent of the variance in their reported use was accounted for by type of stressor (i.e., loss, threat, or challenge). He concluded that,

"Even the largest effect (16%) leaves considerable amounts of variance unexplained. Both characteristics of the individuals and other characteristics of the stressful situation may contribute to this unexplained variance" (pp. 923-924).

The situation perspective's emphasis on the 'crisis' associated with various life events has also been criticized as focusing on negative aspects of what might otherwise be considered "naturally occurring events which require some problem-solving" (Beattie and Viney, 1980). In addition, coping responses to the on-going strains of day-to-day living are not considered under this perspective, nor would individual coping behavior patterns be expected to exist since coping is solely situation determined. Coping strate-

gies, then, do not appear to be explained solely by the situation.

Cognitive-interactionist perspective

Folkman and Lazarus (1980) have posited a fourth perspective on the origins of coping strategies which is based on cognitive-interactionist theory. It holds that coping with stress is transactional in that a person and their environment are in continuous reciprocal interaction, each affecting and in turn being affected by the other. More specifically, coping occurs in two stages. First, "primary appraisal" (cognitive evaluation) of a stressful situation occurs, during which an individual assesses the significance of the event to themselves as well as their prior experience with similar events or symbolically related events. This is followed by "secondary appraisal" of available resources and options for responding to the demands of the situation. Secondary appraisal then leads to actual coping efforts to master, tolerate, or reduce the demands of the stressful situation.

Since the cognitive-interactionist perspective assumes that people are active and purposeful agents in bi-directional interaction with stressful situations, coping strategies are considered to be efforts (made in response to appraisals of a stressful situation) which attempt to manage

or alter the person/environment relationship or to regulate the emotions generated by the stressful relationship. Both personality factors and situation appraisals are therefore considered important determinants of coping cognitions and behaviors (Beattie and Viney, 1980).

Due to the bi-directionality of stressful situations, individuals can mobilize their coping resources to act as buffers, instead of coping resources 'mobilizing' on their behalf (Tucker, 1982). Since appraisal and coping are said to be continuously influencing each other throughout a stressful encounter, this perspective also allows for consideration of both daily on-going strains, which have been noted as important sources of stress (Billings and Moos, 1984), and the presence of stable coping styles based on personality characteristics and learned coping responses.

For example, Lazarus and his colleagues (Folkman and Lazarus, 1980; Lazarus et al., 1974) have argued that the decisive factor in coping with stress may be an individual's appraisal of the event rather than any purely objective feature of the stressful situation. They note,

"It may be that to identify coping styles that transcend situational contexts, we must look at another level of abstraction for ways people think about themselves or relate to others of a particular sort, for example, the powerful or powerless, friendly or hostile, controlling or permissive. Intuitively, we sense the existence of such styles" (Folkman and Lazarus, 1980, p. 229).

It has also been argued that personality predispositions may affect both primary and secondary appraisals of a stressful situation (Lazarus et al., 1974; Myers, 1982). To date, two such cognitive styles have been identified in the literature: 'Copers' who actively prepare to deal with stress and 'Avoiders' who deny stress and minimize their response to it. However, both these cognitive styles, in addition to situational factors, have been found to mediate the appraisal of and response to stress (Myers, 1982).

Folkman and Lazarus (1980) note that,

"According to appraisal theory, in a threatening or harmful situation that is appraised as holding few possibilities for beneficial change, the person will employ emotion-focused modes of coping. On the other hand, when a situation is appraised as having the potential for amelioration by action, the person will use problem-focused coping to alter the troubled relationship that produced the emotional distress" (p. 233).

Specific stressful encounters, however, may involve both problem-focused and emotion-focused coping strategies. For example, in order to effectively use direct action strategies to change a stressful situation, a person might also need to use emotion-focused strategies to control their emotive responses to the stress. Efforts to control one's emotions may enable one to engage in efforts to change or ameliorate the stressful situation.

In fact, Billings and Moos (1984) discovered that in dealing with a recent stressful event, depressed patients

reported using moderate amounts of all types of coping (i.e., appraisal or logical analysis, information seeking and problem-solving; and emotion-coping or affective regulation and emotional discharge). Myers (1982), however, found that while persons with a greater repertoire of coping strategies were more likely to deal with a threatening situation, they were not more likely to experience positive outcomes because they were able to face the threat. Possession and use of both problem-focused and emotion-focused coping strategies evidently does not guarantee successful coping.

While studies using Folkman and Lazarus' perspective have focused mainly on the secondary appraisal of psychological coping resources, such as self-efficacy, coping also involves a secondary appraisal of the social and material resources a person has available to help them cope with stress. Few studies have addressed the secondary appraisal of social and material coping resources. The current study takes the position that an appraisal of the presence or absence of social, as well as psychological, coping resources may be related to coping strategies. Continued research on the determinants of coping styles is critical for clinical efforts to successfully intervene in the potentially negative effects of life change stress. Such interventions should include teaching coping strategies

which have been determined to produce significant beneficial effects as buffers of life change stress (Fontana et al., 1976).

Proposed Factors in Coping

Level of stress

Typically, stress has been conceptualized and operationalized as occurring in response to the changes caused by life events. According to Billings and Moos (1984), however, stress might also include ongoing strains associated with social roles and daily living, including such things as child rearing, household finances, time pressures, and even noise, crowding or inadequate lighting. From this point of view, virtually everyone is experiencing some type of stress on a daily basis and life event changes are actually more crisis-related than most stressors.

From a crisis perspective on life events stress, Kessler, Price and Wortman (1985) point out that it is a mistake to consider emotional distress as an indication of poor adjustment to stress. They cite a study in which high emotional distress actually increased an individual's motivation to effectively cope with life crisis. This suggests that higher levels of stress may actually promote more active, effective coping strategies. Indeed, Billings and Moos (1984) found that use of 'information seeking', a

beneficial coping strategy, was positively correlated with severity of life events for men; however, the relationship was not significant for women.

In contrast, people in Menaghan's (1982) study who reported less marital stress were more apt to use 'optimistic comparison' and 'negotiation' (strategies which were related to better marital adjustment) and were less apt to use 'selective ignoring' and 'helpless resignation' (strategies which were linked to subsequent poor marital adjustment). West and Simons (1983) found that elderly women in their study were more negatively affected by high stress levels than were elderly men. This sex difference in coping with stress may be related to the well-recognized tendency for males to be less emotional, to intellectualize and to deny or suppress their feelings more than females (Bell, 1981). Friedman et al. (1963) and Lazarus (1970) have shown that persons who use strategies such as these to cope with a stressor show less physiological responsiveness than individuals who do not use these strategies. Simons and West (1985) concluded that perhaps elderly women's greater responsiveness to high levels of stress actually serves to inhibit their ability to use other, more effective coping strategies.

Several studies have also shown that coping strategies are not only related to level of stress, but also to type of

stress encountered (Billings and Moos, 1981; Folkman and Lazarus, 1980; McCrae, 1984; Pearlin and Schooler, 1978). For example, in McCrae's (1984) study, the use of faith, fatalism, expression of feelings, and wishful thinking were highly associated with threat or loss stressors, while more vigorous and diverse coping efforts, such as rational action, perseverance, positive thinking, restraint, humor, etc., were elicited when facing challenge stressors. Most of the strategies associated with challenge stressors could be considered mature, which suggests that challenge stressors are more prone to mature types of coping. All of these studies indicate that, though researchers have used very broad conceptions of coping efforts, such as mature versus immature or problem-focused versus emotion-focused, a relatively large number of possible strategies may be most useful in delineating situational differences in patterns of coping.

Sex and age

Sex differences Given that men and women are socialized into different gender roles, these role differences are expected to be played out in their coping efforts. The male role is generally inexpressive and aggressive, while the female role is more expressive and passive (Bell, 1981). Therefore, men would not be expected to react to

stress by expressing their feelings to family and friends; instead, they would be expected to take direct action strategies to counter the stressful situation. In contrast to men, women would be expected to be emotional when under stress and to verbalize their emotional reactions to family and friends. They would also be expected to use more passive strategies to cope with stress, for example, denial or 'looking for the silver lining,' rather than taking direct action to deal with a stressor.

Studies that have examined sex differences in coping behaviors do give weighted evidence that differences do exist (Burke and Weir, 1979; Funabiki et al., 1980; Ilfeld, 1980; Kleinke, Staneski, and Mason, 1982; Padesky and Hammen, 1981; Rippere, 1976). These studies have generally shown that women are more likely than men to cope by confiding in a friend or by rationalization, distraction or avoidance, while men are more likely to use problem-solving and to become aggressive or to ignore stressors.

In addition, women's coping strategies are supposedly less efficacious in preventing negative health consequences due to stress (Billings and Moos, 1981; Pearlin and Schooler, 1978). For example, Billings and Moos (1984) have evidence that women make significantly greater use of emotional discharge than men, with emotional discharge being associated with negative health outcomes. Kleinke,

Staneski, and Mason (1982) also discovered that women reported greater use of crying as a coping strategy, but that crying was associated with higher levels of depression. For men, high depression was associated with coping strategies such as smoking, drinking, taking stimulants, sleeping, day-dreaming, or spending time alone and with eating, while for women it was associated with watching T.V., crying, day-dreaming, or blaming themselves. Low depression, however, was associated with passive coping in men (i.e., meditating/relaxing, ignoring, finding humor, or confronting their feelings) and with problem-focused coping in women (i.e., taking walks, working out a plan, cutting down on other responsibilities or confronting their feelings).

Some studies have found that women are more apt to report using both behavioral and cognitive coping strategies suggesting their better ability to cope than men (Astor-Dubin and Hammen, 1984; Funabiki et al., 1980). Women and men in the Astor-Dubin and Hammen study, however, did not differ in the frequency of reported cognitive coping (i.e., avoidance, detachment, etc.); men simply reported less behavioral coping (i.e., physical, nonphysical, social, and solitary activities) than women. It appears that the men dealt with their problems internally, while the women sought a greater amount of social and emotional support. However, in Funabiki et al.'s (1980) study women used more cognitive

or passive coping strategies, such as telling themselves not to be sad or depressed, while men used more active and behavioral strategies, such as doing something new or enjoyable. In Folkman and Lazarus's (1980) community sample, there was no sex difference in the use of emotion-focused coping (i.e., looking for the 'silver lining,' accepting sympathy, or trying to forget).

Some studies, however, have also indicated that women are more exposed to environmental stressors, have fewer supportive coping resources, and that they may be more responsive to stressors than men (Bourque and Back, 1977; Ekehammar, 1974; Holahan and Moos, 1981; Masuda and Holmes, 1978; Lieberman, 1978; West and Simons, 1983), as well as more responsive to the presence or absence of coping resources (West and Simons, 1983). Kessler, Price and Wortman (1985) note that, "there is a significant interaction between sex and undesirable events in predicting distress, with women appearing more vulnerable than men to the effects of stressful events." Several different hypotheses have been advanced to account for female vulnerability to stress. These have included arguments that females are disadvantaged in access to social support (Belle, 1982), in the use of effective coping strategies (Pearlin and Schooler, 1978), and in personality characteristics (Radloff and Monroe, 1978).

There is some indication that men and women differ in the type of stress they are more likely to encounter. Folkman and Lazarus (1980) found that women reported more stress related to family and health, while men reported more stress related to work. Women's roles may also subject them to greater levels of chronic stress than men (Gove, 1978). It has been hypothesized that women provide more support to others who are under stress than do men and that this creates stress and demands that can lead to psychological impairment (Belle, 1982). Women might be more empathic than men, or might extend their concern to a wider range of people which would account for the greater impact of network events on women than on men (Kessler et al., 1984). Also, the stress from a negative home environment and from family strains were found to be more highly correlated with health outcomes for women, while for men, work stressors were more highly correlated with health outcomes (Billings and Moos, 1984).

Age differences McCrae (1982) points out that the small amount of literature on age differences in coping have two different theories of why age differences might exist. First, one could argue that older individuals are rigid and unable to adapt to new stressful situations or that they are prone to use only passive and ineffective mechanisms. Pfeiffer (1977) says,

"while some older persons continue to use the entire range of adaptive mechanisms, many return to the use of more primitive ... defense mechanisms. Thus, unmodified anxiety, depression, withdrawal, projection, somatization, and denial are the preponderant mechanisms used in this age group" (p. 651).

Gutmann (1970) would tend to agree when he hypothesizes that as one ages they shift from active mastery to passive mastery and even to what he calls "magical mastery." The latter is based on distortion and denial, a "wishing away" of real-life problems. These theorists seem to posit a return to earlier, less effective coping styles with increasing age, perhaps due to an elderly person's assuming a 'sick' or 'dependent' role that would not promote direct action coping strategies. McCrae (1982) refers to this theory as the "regression hypothesis."

Vaillant (1977) proposes a different developmental sequence. He argues that the defenses used by older people become more effective with age and less distorting of reality. He believes that as one ages their use of immature, passive-aggressive behaviors decreases and more mature coping strategies, like altruism, humor, and anticipation, increase. In contrast to the "regression" and "maturation-al" views on age changes in coping behavior, however, McCrae (1982) argues that "there may be a period of increasing maturation in coping style followed by a period of decline and return to more primitive, regressive styles."

A number of studies to date seem to affirm the maturational view of age differences in coping behaviors. The younger respondents in a study by Billings and Moos (1984) were more likely to use emotional discharge as a coping strategy than were older respondents, and older women were more likely to use logical analysis and information seeking than younger women. Ilfeld (1980) also found that older respondents were more likely to use acceptance and less likely to seek outside assistance. Similarly, McCrae (1982) discovered decreased use of hostile reactions, escapist fantasy, sedation, and assessing blame among their older respondents, and an increase in the use of faith. Yet, none of his hypothesized 'mature' coping strategies evidenced any increase in use among the older respondents and in fact three 'mature' strategies (i.e., positive thinking, self-adaptation and humor) actually showed cross-sectional decreases. It seems more likely that as one ages they may not actually be maturing in their coping responses, but rather they may simply be discarding coping responses that were ineffective in the past.

There is some evidence that dealing with stressful encounters can sometimes promote greater coping capacity at a later date (Haan, 1982). If so, then older people might be expected to develop a rather diverse and effective coping capacity as they deal with life stressors over the years.

Unfortunately, nearly all previous research on stress and coping has employed samples of young and/or middle-aged adults. The relatively few studies that have explored age differences in coping, however, do suggest that the relationship between stress and coping may be different for older persons than for those in younger age groups (Fuller and Larson, 1980, Simons and West, 1985).

Elderly individuals appear to rate life events as less stressful than do younger age groups and they display less psychophysiological response to stress (Simons and West, 1985). With advancing age, however, the elderly do experience an increase in diseases thought to be related to stress, and it has been suggested that aging causes a diminution of functional and reserve capacities for responding to stress making the elderly more vulnerable to negative stress effects. Eisdorfer and Wilkie (1977) have noted, "in old age, fewer changes would be required to produce health changes, particularly if the system is already weakened by disease" (p. 267).

While Simons and West (1985) did find a relationship between mounting life change and illness using an elderly sample, several resources which had served as buffers for younger ages actually appeared to exacerbate negative health outcomes among the elderly. They noted that,

"Many of the frequently discussed coping resources, for example feelings of self-efficacy or self-mastery, presumably function as a buffer against life events because they facilitate behaviors that enable one to directly address and successfully overcome the challenges presented by the events. However, many if not most of the major life changes experienced by the aged are events that are negative and uncontrollable. Such changes result in consequences that do not demand active coping behaviors so much as the ability to construct a somewhat positive and accepting definition of the new circumstances" (p. 175).

In as much as coping resources for younger aged individuals may function as resources because they serve to encourage active behavioral coping responses, they may discourage more appropriate strategies of reappraisal and acceptance needed to cope with stressful life events in old age. Using a sample of individuals over age 60, Clark (1982) found that personal resources, such as self-confidence, health, and occupation, had stronger correlations with perceived ease of coping with daily stressors than did perceptions of the ability to receive help from social resources, such as family, neighbors, and friends. This indicates that the elderly may benefit more from personal resources than from social resources.

Some have argued that it may be inappropriate to focus on changes in coping style with age, but that emphasis should rather be on the differences in the types of stressors which the elderly may encounter more frequently and which may demand different styles of coping than do the

stressors encountered by younger persons (Simons and West, 1985). While the stressors which occur at younger stages of the life-span may be amenable to direct action coping strategies, the stressors in older age are often related to losses (such as the loss of a spouse or friend, the loss of eye sight or hearing, or the loss of mobility and physical health) which cannot be erased through direct action strategies. Lazarus and Launier (1978) would classify each of these stressors as 'exit' events and, to a certain degree, each requires acceptance and more passive styles of coping.

Folkman and Lazarus (1980), using a sample aged 45 to 64, found no age differences in problem- or emotion-focused coping, but did find a trend in which older respondents reported more health-related stress and fewer family- and work-related stress than did younger respondents.

Similarly, McCrae's (1982) study revealed that the amount of reported stress from challenges (i.e., stress from family and work) decreased dramatically between age groups, whereas threats (such as changes in health) increased and losses (such as death or divorce) remained constant. In addition, age differences in coping behaviors appeared to be related to type of stressor (McCrae, 1982).

Status Characteristics

Education In Menaghan's (1983a) study, persons with more education had more realistic appraisals of stressful situations and used more active problem-solving coping strategies. Similarly, Billings and Moos (1984) found that more educated respondents reported greater use of logical analysis. Billings and Moos (1984) also reported that men with higher education attainment were more likely to use information seeking and problem-solving than were men with lower education.

Occupational status Several studies have concluded that stressful life experiences have a greater impact on negative mental health outcomes in the lower class than in the middle class (Kessler and Cleary, 1980; Langner and Michael, 1963; Vance, 1982). There appears to be a class-linked vulnerability to stress that has two hypothesized origins. First, there may be some type of "drift" of incompetent copers into the lower classes, or second, the life experiences of the different social classes may lead to the development of different coping capacities as well as to different access to coping resources (Kessler, Price, and Wortman, 1985).

There is more evidence for the later hypothesis. Some studies have concluded that lower class people have less access to social supports and have personality character-

istics associated with vulnerability to stress, such as low self-esteem and fatalistic outlooks on life (e.g., external locus of control) (Brown and Harris, 1978; Wheaton, 1980). Westbrook (1979) also found that persons of low socio-economic status may use fewer active and preparatory coping responses and more fatalistic or avoidance responses than persons of higher socio-economic status. Similarly, the higher occupational status women in Billings and Moos (1984) study used more logical analysis and the lower occupational status men used more emotional discharge. Yet, Billings and Moos (1984) did not find socio-economic differences in the relationship between stress and depression.

Menaghan (1983b) found that higher socio-economic status respondents reported greater use of optimistic comparisons, a strategy related to both less current distress and fewer subsequent problems, than did those from lower socioeconomic status. Unfortunately, optimistic comparison was not related to positive outcomes among lower occupational status individuals which suggests that economic pressures may be an overriding problem preventing positive outcomes. At least one study has indicated that occupational and economic problems may be more resistant to coping efforts than are other problem areas (Pearlin and Schooler, 1978).

High occupational status is not necessarily as beneficial for the elderly as it may be for younger age groups in

terms of its effects on coping capacity. Sherwood et al. (1974) found that the white-collar elderly in their sample suffered a greater loss in life satisfaction upon institutionalization than did the blue-collar elderly. Similarly, in a study conducted by Simons and West (1985), high occupational status actually increased an elderly person's chances of being ill when under high life events stress. Nevertheless, it had salubrious main effects on health after its interaction effect with stress was partialled out, which suggests that high occupational status is beneficial until encountering high levels of stress.

High occupational status may cause a perception of greater losses in the face of unavoidable and uncontrollable life events in old age, especially since people in higher occupational statuses have scored higher on perceptions of self-mastery and have reported using direct action coping strategies rather than selective ignoring or redefinition (Pearlin and Schooler, 1978). Aging may actually cause a status leveling effect (Rose, 1965) that involves a greater sense of loss for individuals of high occupational status than for those of low.

While women usually have lower occupational status than men, West and Simons (1983) found no sex differences in the effect of occupational status on illness among their elderly

sample. High occupational status exacerbated the effects of high life change stress for both sexes.

Marital status Marital status has been consistently associated with the risk of negative health outcomes in times of high life stress (Myers, Lindenthal, and Pepper, 1975). Marriage may be more beneficial for men than for women (Bernard, 1971; Gove, 1972, 1973; Sporakowski and Hughston, 1978; Vanfossen, 1981). Chiriboga and Dean (1978), for example, found that women ages 21 to 72 reported more interpersonal stress from their marital relationships than men, and for the older women in their study, marital events were highly correlated with negative changes in self-esteem and with depression. Several studies have also indicated that men rely on their wives for intimacy and experience greater disruption at the loss of their spouse than women (Lopata, 1973; Powers and Bultena, 1976) and that single men have substantially higher rates of depression than married men (Aneshensel et al., 1981).

These studies would seem to indicate that presence of a spouse may enhance the coping capacity of men while inhibiting the coping capacity of women. Yet, Billings and Moos (1984) found no sex differences in reported coping responses when controlling for marital status. Both men and women who were married reported greater use of information seeking than did single men and women. In a study comparing single

and married mothers, married mothers coped with conflicts between work and parenting through internally redefining their self-expectations (a more cognitive strategy), while single mothers coped by trying to improve the quality of their role performances (a more behavioral strategy) (Harrison and Minor, 1982).

In a sample of elderly men and women, marital status indeed tended to exacerbate illness among the women under high life change stress, while it had no significant effect on the men (West and Simons, 1983). This suggests that marriage is not necessarily a more potent buffer for men, but that marriage adds little to their ability to cope with stress and may have actually decreased the women's ability to cope. Interestingly, marital status also appeared to have a beneficial direct effect on health until high levels of life change stress were experienced (West and Simons, 1983). Thus, marital status became dysfunctional for women only after an increase in the level of stress.

Psychological Characteristics

Social integration Studies of the coping strategies of depressed individuals, both clinically and in the general population, seem to indicate that their coping strategies are characterized by negative self-preoccupation and an inability to deal decisively and effectively with their

stressor(s). In their study, Coyne et al. (1981) found that the depressed people in his sample sought more emotional or informational support and were more likely to use wishful thinking as coping strategies. Depressed patients also appear to make greater use of information seeking and emotional discharge and less use of problem-solving than did nondepressed controls (Billings et al., 1983). In yet another study, Funabiki et al. (1980) noted that depressed individuals reported greater use of self-deprecation and self-preoccupation, while nondepressed individuals reported more use of adaptive responses, such as thinking of ways to change their situation. Similarly, Kleinke, Staneski, and Mason (1982) found that depressed males seemed to use strategies of social withdrawal, such as going for walks and spending time alone, while depressed females reported more self-blame.

Beattie and Viney (1980) found that parents with negative appraisals of the experience of lone parenthood had considerably more emotional conflict (perhaps indicating depression) and seldom used coping strategies such as reliance on others, realism or confrontation. In contrast, those with positive appraisals of the experience of lone parenthood preferred the coping styles of resignation and reliance on others. This finding also points to the use of unrealistic coping and self-preoccupation by depressed

individuals, but studies have yet to determine whether poor coping leads to negative appraisals and depression or whether negative appraisals lead to poor coping. In a study conducted by Billings and Moos (1984), depressed patients reported more negative events and strains and less support than did nondepressed controls. In addition, the coping strategy of emotional discharge was positively related to both depression severity and physical illness, while problem solving was negatively related to depression severity. Information seeking was also positively related to depression severity for men, while affective regulation was negatively correlated with depression for women.

Religiosity Religiosity is the extent to which a person is committed to their religious beliefs and practices. Moberg (1965; 1972) has found that religiosity is associated with high morale and life satisfaction, both of which may counter the negative effects of stressful life events. Also, religious convictions often provide a perspective from which pain and suffering can be perceived as meaningful or as part of a larger plan which might lead to less active coping strategies. There is evidence that individuals who find some meaning in stressful life events are able to cope more effectively with the event than those who are not (Silver et al., 1983), especially in old age (Gubrium, 1973; Heyman and Gianturco, 1973; Moberg, 1974).

Yet, West and Simons (1983) found no relationship between religiosity and health outcomes using an elderly sample, and Silver et al. (1983) discovered that when others attempt to suggest reasons or meanings behind stressful events, such as "it's God's will," the benefits are not as great. Although research has consistently indicated that women are more religious than men across the life cycle (Orbach, 1961; Payne and Whittington, 1976; Petrowsky, 1976), studies have yet to address the possibility of sex or age differences in the effects of religiosity on coping outcomes.

Perceived social support It has been hypothesized that social supports, such as spouse, social networks, and social organizational involvements, may intervene in the stress adaptation process by reducing subjective perceptions of stress (Dohrenwend and Dohrenwend, 1981). In addition, social supports may increase one's perceived options for coping. First, merely due to the structural aspects of their presence (i.e., their numbers, proximity and frequency of contact), individuals may feel comforted by having the alternative available to call on them for psychological and/or material support. Second, social resources, such as spouse or friends, may actually be used as sources of additional information on how to cope or as role models who share their previous experiences with coping, thereby increasing perceptions of the number of alternative coping

strategies available to an individual (Kessler, Price and Wortman, 1985). Perhaps the greater the number of perceived options for coping with a stressful situation, the less stressful the situation may be appraised to be.

Most research has focused on the stress "buffering" effects of social supports (i.e., interaction with amount of stress) rather than on the direct effects of supports on health outcomes (Lin, 1986; Thoits, 1982). Tucker (1982) has noted that,

"To the extent that coping behaviors represent stress reduction techniques, research to examine the buffering effect of social support must observe relevant coping strategies and mechanisms. ... We do not know how social support mediates or buffers life stress" (p. 122).

Studies relating social support to physical or mental health outcomes have been criticized as confounding social supports with measures of stressors and as assuming that absence of social support is the cause of stress rather than the consequence. However, both cross-sectional studies and longitudinal studies relating the presence or absence of social supports to health outcomes have shown that actual emotional support and perceived access to broad-based support from others diminish the negative outcomes associated with high stress (Kessler and McLeod, 1984; Silver and Wortman, 1980). This, and many other studies on social support (Billings and Moos, 1984; Chan, 1977; Henderson, 1977; Porritt, 1979),

would suggest that emotional support may be more important in promoting positive health outcomes than structural variables such as presence or frequency of contact.

Most reseachers assume that when the time comes, social support will mobilize automatically to an individual's benefit, but activation of a social support network may be a function of an individual's coping preference or the situation. In fact, some research indicates that the greater the need for social support (i.e., the greater the amount of stress an individual is facing), the less support they may be likely to receive (Kessler, Price and Wortman, 1985). It appears that the more severe the stress, the more threatened or uncomfortable others may become in giving support. Characteristics of a social support network may also make it more or less desirable as a coping resource. For some, social support may actually be negative to their best interests (Tucker, 1982). Contrary to evidence of the benefits of social supports, there has been some evidence that social support can undermine or deter positive coping efforts (Maddison and Walker, 1967; Mechanic, 1978; Wortman and Lehman, 1984). Individuals under high life events stress may actually become annoyed or angry at others who attempt to offer 'helpful advice' on how best to cope. Three months after the death of a spouse, suggestions from others to develop new or resume old interests, hobbies or

activities were often greeted with hostility (Maddison and Walker, 1967). Similarly, when doctoral candidates were studying for their comprehensive prelim exams, their spouses suggestions that they were sure to pass only increased their perceived level of stress (Mechanic, 1978).

Studies of experimental support interventions, however, have shown that social intervention after stressful life events, such as surgery or transition to parenthood or widowhood, is effective in enhancing positive health outcomes (Kessler, Price, and Wortman, 1985). Unfortunately, none have explored how social supports intervene to produce positive health outcomes. Social supports may increase self-esteem or improve coping effectiveness, or they may increase one's perceived alternatives for coping thereby reducing the perceived level of stress due to the life event.

There are several studies that show that support from confidant relationships is an effective buffer against life change stress, especially for women (Arling, 1976; Brown et al., 1975; Kivett, 1978; McMiller and Ingham, 1976), and that, while women avoid socializing with large groups of people as a coping strategy, they do report greater use of confiding in a close friend (Funabiki et al., 1980). Women have also been shown to score higher than men on the desire

for affiliation (Hoyenga and Hoyenga, 1979; Maccoby and Jacklin, 1974) and on dependency behavior (Sherman, 1971).

In some studies, women have reported only slightly more numerous and supportive social resources than men, especially in the area of an intimate other (Billings and Moos, 1984). Yet in Billings and Moos' (1984) study, social resources, including number of friends, frequency of contact and quality of relations, were more strongly related to the depression severity and physical symptoms of women than those of men. Similarly, under conditions of fear, affiliation reduced the anxiety of women, but not that of men (MacDonald, 1970). West and Simons (1983), however, found no relationship between presence of social resources and positive health outcomes among either the elderly men or women in their sample who were under high stress. The buffering effects of a social support relationships for men have not been clearly addressed in the literature as of yet. Costello's (1982) research indicated that the absence of confidants was additively associated with depression in their community sample of both men and women, but it did not interact with level of stress to predict health outcomes.

Studies have indicated that the friendships of elderly women are affectively richer than those of elderly men, and that elderly men have more difficulty establishing confidant relationships with persons other than their wives (Arth,

1962; Babchuk, 1978; Blau, 1973; Booth, 1972; Huyck, 1977; Lowenthal and Haven, 1968; Lowenthal and Robinson, 1976; Powers and Bultena, 1976). West and Simons (1983), however, found that presence of a confidant did not significantly protect elderly women against the disequilibrating effects of high life change stress and actually appeared to somewhat exacerbate illness among the men who were under high life change stress. The presence of a confidant, then, may add little to an elderly woman's ability to cope, while it may actually decrease the coping ability of elderly men.

In general, social support from a spouse or from others does appear to have some effect on the relationship between stress and health, but the relationships may vary by age and by sex. For men who are under high stress, the presence of a spouse may be more beneficial than the availability of support from others. Strong support relations with others may be more beneficial for women than the presence of a spouse. The benefits from social support may also be more beneficial during young adulthood and may have less positive effects on health when coping with stress in old age.

Implications

Treatments designed to facilitate the use of appropriate strategies to cope with stress are becoming more and more common in both the popular and professional literature.

Almost anyone, anywhere can today walk into a bookstore and purchase books or magazines on stress management, and yet this literature is based on little or no working knowledge of the actual coping processes which promote the most positive adaptation to stress.

While some studies have attempted to evaluate the impact of interventions designed to teach coping skills, they are too few in number and involve only select populations experiencing specific stressors (Kessler, Price and Wortman, 1985). The lack of research on interventions is partly due to the belief that it may be detrimental to modify an individual's coping style. It is difficult to determine exactly what constitutes the 'appropriate' way of coping with any given individual situation. Pearlin and Schooler (1978) found that in the general populace, over 40 percent of the strategies used to deal with role strains were related to greater role stress. Menaghan (1983b) found a similar pattern in her study of normal married couples. Tentative findings also seem to suggest that unsuccessful attempts to cope with stress are more deleterious than making no attempt to cope at all (Kessler, Price and Wortman, 1985). Menaghan (1983b) postulates that unsuccessful attempts at coping may result in greater stress, which may result in more unsuccessful coping efforts.

Kessler, Price and Wortman (1985) note that it is difficult to implement interventions to 'teach' appropriate coping strategies when there is, "a lack of knowledge about how coping strategies are best imparted to others." Again, this points to a need to more fully explore the correlates or determinants of coping strategies, rather than simply their mediating effects on health outcomes.

CHAPTER III. THEORY AND HYPOTHESES

As demonstrated in the previous chapter, the theory surrounding stress and coping is, as yet, in its infancy. Theoretical controversies are more of a rule, than an exception. The current chapter highlights the development of what little theory there is in the area of stress and coping and presents simple diagrams of the hypothesized relationships in the theoretical models. Using Folkman and Lazarus' (1980) recent theoretical work on stress and coping, which is based on cognitive-interactionist theory, a new model of stress and coping is then proposed and diagrammed. The chapter ends by listing and explaining the anticipated relationships between the variables in this new model of coping.

Theoretical Framework

Selye's (1936) original conception of stress (illustrated in Figure 1) was based on research on the physical reactions of animals exposed to experimentally induced stress in laboratory settings. Upon exposure to a stressor, the animals were hypothesized to pass through an alarm reaction stage in which there was a mobilization of bodily defensive resources. These defensive resources would then remain constant during the stage of resistance, usually leading to adaptation. If the stressor was too severe or

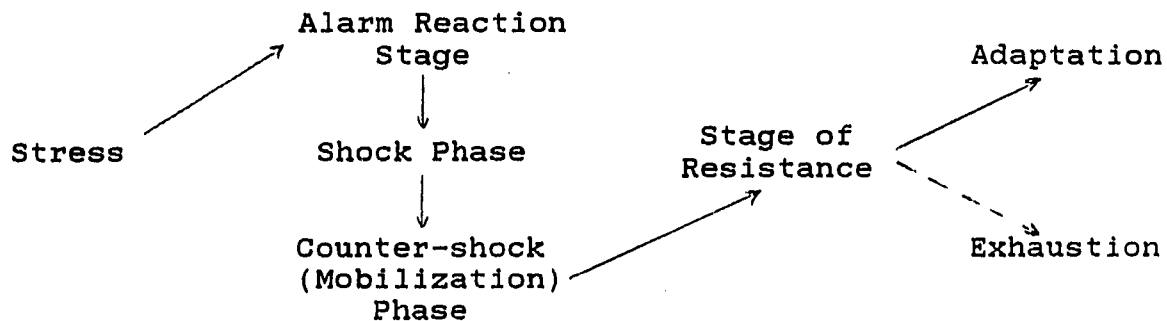


Figure 1: Selye's (1979) General Adaptation Syndrome

occurred over a long period of time, however, the result could be exhaustion instead of adaptation.

Researchers adopted this theoretical model of stress and coping to study the physical and psychological health of individuals experiencing life change stress. Initial research in the late 1960s and early 1970s did not investigate the presence of the various 'stages' as originally hypothesized by Selye, but rather documented a direct link between the number and severity of life change stressors and negative health outcomes (Dean and Lin, 1977; Rabkin and Struening, 1976; Holmes, 1979). Correlations between high life change stress and negative health outcomes were found to be surprisingly modest. The relationship between life change stress and negative health outcomes was consistently present, but it did not fully account for those individuals

experiencing high levels of life change stress who did not become ill, nor did it account for individuals with relatively low levels of life change stress who did experience increasing health problems.

In the middle to late 1970s, researchers expanded the life change-health change model to include social and psychological coping resources which were hypothesized to buffer or intervene between life change stress and negative health outcomes. It was believed that these coping resources would protect individuals from the deleterious effects of high life change stress. Numerous studies were then done relating negative health outcomes to the presence or absence of various social and psychological 'coping resources' and to their 'buffering' (or interaction) effects with life change stress (Antonovsky, 1974; Cobb, 1976; Rabkin and Struening, 1976). The results from these studies were also less predictive of negative health outcomes than originally hoped and shortly thereafter coping behaviors or strategies were also added to the model as mediators in the stress-illness relationship (Figure 2).

Within a short time, studies on coping strategies as stress moderators also proved to be a less fruitful avenue of inquiry than previously hoped. Coping strategies were related to health outcomes to the same modest degree that social and psychological coping resources had been previous-

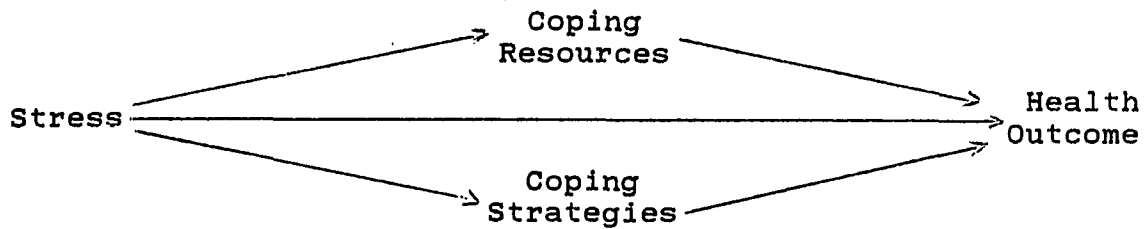


Figure 2: Stress-Moderators-Health Outcome Model

ly (Billings and Moos, 1981, 1984; Felton, Revenson, and Hinrichsen, 1984). Consequently, the popular stress-moderators-health outcome model was heavily criticized as overlooking the processual nature of stress and coping. Stress researchers had been hypothesizing that moderators were linked to health outcomes without examining how they were linked (Billings and Moos, 1984; Mitchell et al., 1983).

Prior to current research, coping resources had been theoretically related to stress outcomes because they were supposedly able to (1) facilitate adaptive behaviors which can alter the objective reality of the stressful situation and (2) facilitate psychological defenses and comforting cognitions that lessen the felt level of stress (Lazarus, 1976; Mechanic, 1978). Few studies, however, have examined

this theoretical link between coping resources and adaptive (coping) behaviors and cognitions.

Toward a Model of Coping

Using cognitive-interactionist theory, Folkman and Lazarus (1980) have argued that coping is the result of reciprocal interaction between a person and their environment. When encountering a stressful situation, an individual will first evaluate the personal significance of the situation and recall prior experience with similar situations (primary appraisal). Then, they will evaluate the resources and options available for them to use in response to the demands of the situation (Figure 3). Resources which can be appraised for possible use in coping with stress include both psychological resources, such as ego defensive and personality factors, as well as social resources, such as family or friends. Decisions regarding coping strategies then are made in response to secondary appraisals and are attempts to manage or alter the relationship between a person and their environment or to regulate the emotions generated by the stressful situation.

The 'secondary appraisal' of coping resources hypothesized by Folkman and Lazarus is much like Seyle's original 'counter-shock' phase of the adaptation process in which there is a hypothetical mobilization of resources to be used

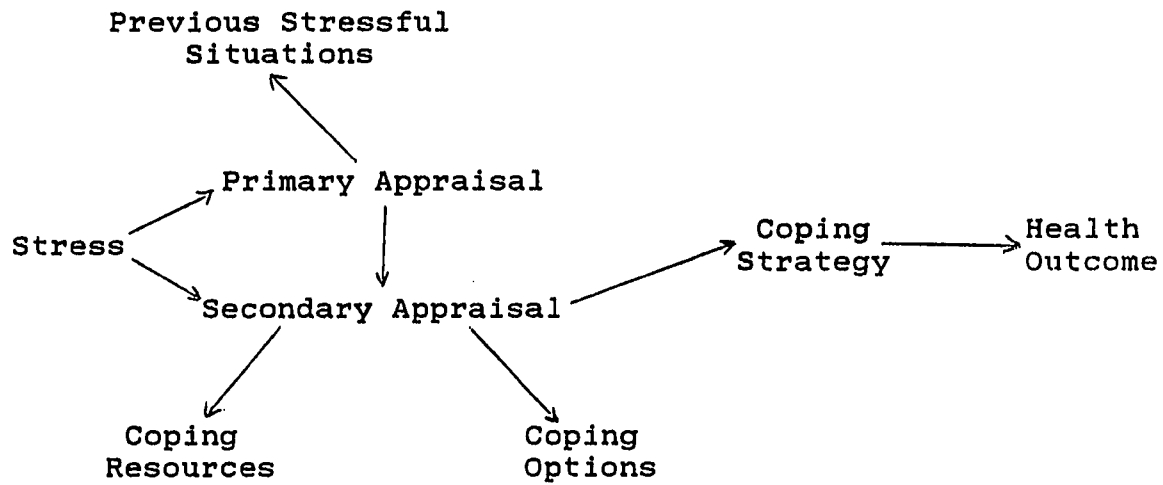


Figure 3: Folkman and Lazarus' (1980) Model of Coping

during the 'stage of resistance' that follows. The relationship between the secondary appraisal of coping resources and an individual's espoused coping strategies will be examined in this study along with the direct and buffering effects of both coping resources and coping strategies on health. Both the objective presence of some resources and an appraisal of the availability of others will be considered as having an effect on the coping strategies espoused by individuals. In the final model, both coping resources and coping strategies are held as having both direct and indirect (buffering) effects on health outcomes (Figure 4).

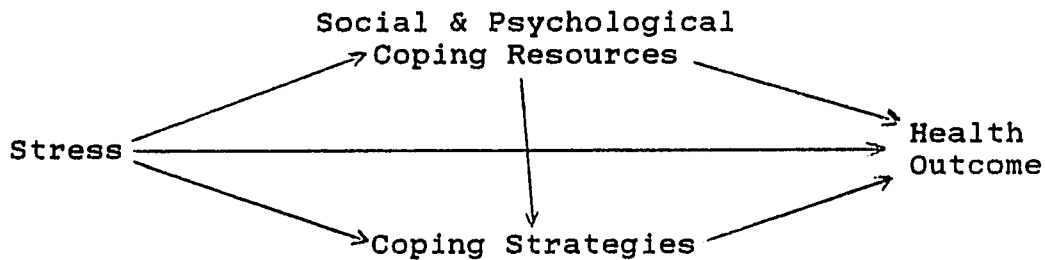


Figure 4: A Model Linking Stress, Resources, and Strategies to Health Outcome

Hypotheses of the Model

Stress will be conceptualized as life change stress for purposes of this study, and health will refer to self-rated physical health. Six social and psychological coping resources will be examined. They include the following concepts: education, occupation, marital status, social integration, religiosity, and social support. Problem-focused coping (i.e., focusing on the stress and its solutions), coping by cognitive displacement (i.e., focusing the mind on something besides the stress), and coping by seeking social support will be included as coping strategies. In addition, age and sex differences in the relationships between the concepts in the model will also be explored.

The anticipated relationships in the model of stress and coping shown in Figure 5 are derived from the cognitive-

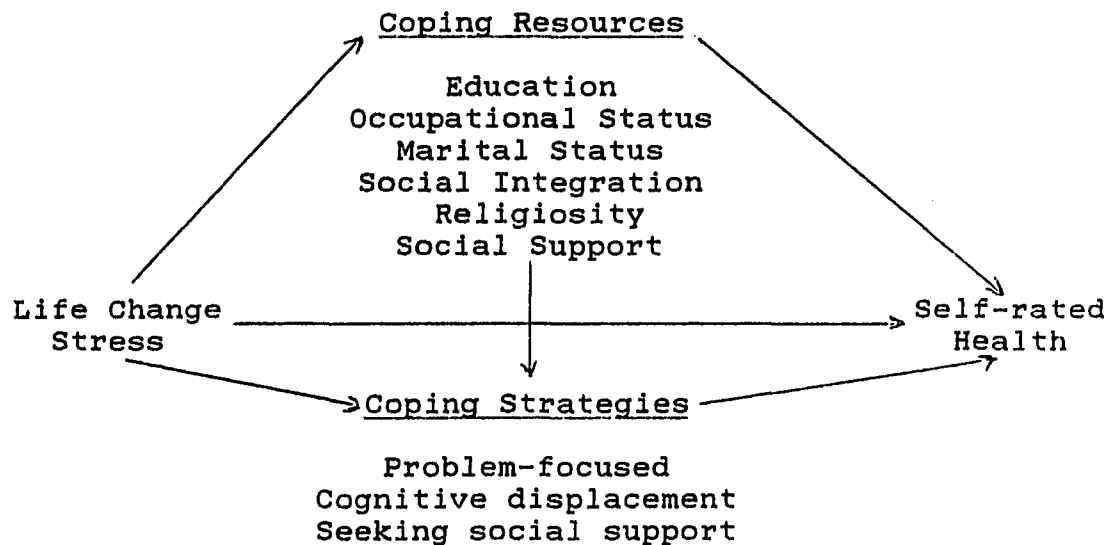


Figure 5: Model Linking Life Change Stress, Resources, and Strategies to Self-rated Health

interactionist theoretical framework and from the review of previous empirical research on coping presented in Chapter II. They are as follows:

A. Hypotheses linking stress, coping resources and coping strategies to self-rated health.

HoA.1 The higher the level of life change stress, the worse the self-rated health.

According to cognitive-interactionist theory, the greater the level of stress, the greater the amount of readjustment necessary to successfully cope with the stress and the greater the chances for real or perceived physical health problems to develop. High levels of stress have

often been positively related to poor health, especially for women and older persons (Bourque and Back, 1977; West and Simons, 1983).

HoA.2 Higher educational attainment is positively related to self-rated health.

HoA.2.a Higher educational attainment will buffer the negative impact of high life change stress on self-rated health.

As noted before, higher levels of education have been associated with more realistic appraisals during stressful situations (Menaghan, 1983a). Therefore, cognitive-interactionist theory would predict it to be a positive coping resource, as well as an effective buffer for people who are under high life change stress.

HoA.3 Higher occupational status is positively related to self-rated health.

HoA.3.a. Higher occupational status will buffer the negative effects of stress on self-rated health.

Studies have shown that middle and upper class people have better health, more financial resources, are more active, have better housing, express higher life satisfaction, and have fewer worries than lower class people (Brown and Harris, 1978; Kessler and Cleary, 1980; Langner and Michael, 1963; Vance, 1982; Wheaton, 1980). Occupational status, as an indicator of social class, can then be seen as

having a positive relationship with self-rated physical health, and a buffering interaction with stress.

HoA.4 Higher levels of social integration are positively related to self-rated health.

HoA.4.a Higher social integration will buffer the negative impact of stress on self-rated health.

As noted before, feelings of anomie connote a certain degree of social isolation and self-preoccupation on the part of an individual (Billings et al., 1983; Coyne et al., 1981; Funibiki et al., 1980). Someone with high anomie would be expected to appraise a stressful situation as having few alternative solutions, which suggests their health would more easily succumb to negative stress effects. Cognitive-interactionist theory would then suggest that high social integration would prove to act as a stress buffer.

HoA.5 Religiosity will increase positive ratings of health.

HoA.5.a Religiosity will buffer the negative effects of stress on self-rated health.

In several studies, high religiosity was associated with high morale and life satisfaction. Two studies also seem to indicate the importance of religion in adjustment to life events (Gubrium, 1973; Heyman and Gianturco, 1973). In addition, Moberg (1974) found that health care professionals often report that their patients who express high religiosity are in better health. Religiosity may help to sooth

feelings of frustration and anxiety while adjusting to stress. Cognitive-interactionist theory would then predict that highly religious people would benefit from their religiosity by experiencing fewer negative effects of stress on self-rated physical health.

HoA.6 Having a spouse as a coping resource will increase positive ratings of physical health.

HoA.6.a Presence of a spouse will act as a buffer between high stress and self-rated health.

HoA.7 The more supportive an individual's social relationships the better their self-rated health.

HoA.7.a Presence of supportive social relationships will help to buffer the effect of stress on self-rated health.

Cognitive-interactionist theory would suggest that the social resources of marital status and qualitatively rich social support relationships will intervene in the stress-illness relationship. Having a spousal relationship appears to be of greater importance to the well-being of men (Bernard, 1971; Gove, 1972, 1973; Lopata, 1973; Powers and Bultena, 1976; Simons and West, 1985), while the presence of qualitatively rich social support relations has been found to be a more significant stress buffer for women (Billings and Moos, 1984; MacDonald, 1970). These relationships are predictable given the gender roles which men and women assume in spousal and friendship relations. In the spousal role, women may more often be the giver of support rather

than the receiver (Chiriboga and Dean, 1978), while friendship roles for women are more reciprocal in giving and receiving support (Hoyenga and Hoyenga, 1979; Maccoby and Jacklin, 1974; Sherman, 1971). Friendship roles for men appear to play much less of a supportive function (Bell, 1981). Therefore, men should benefit from having a spousal resource, while strong social support relationships should benefit women.

HoA.8 Problem-solving, cognitive displacement and seeking social support are positively related to self-rated health.

HoA.8.a Problem-solving, cognitive displacement and seeking social support will act as buffers between stress and self-rated health.

In accord with cognitive-interactionist theory, psychological and behavioral efforts to cope with stress are said to intervene in the stress-illness relationship by lessening the impact of stress on an individual's well-being.

Problem-solving, cognitive displacement and seeking social support are all coping behaviors that should buffer the potentially negative effects of high life change stress on self-rated health (Billings and Moos, 1984; Folkman and Lazarus, 1980; Myers, 1982). Since women are hypothesized to be more prone to seek social support and since social supports are also hypothesized to have a greater impact on the well-being of women, the coping effort of seeking social

support is hypothesized to be a buffer for women under high life change stress, while its effect on men is unclear.

B. Hypotheses linking stress and the resource variables to coping strategies.

- HoB.1 The greater the level of stress, the more frequent the use of all three types of coping strategies.

Since people are assumed under cognitive-interactionist theory to be active and purposeful agents affected by and affecting their environments, if the environment presents an individual with greater levels of stress, then the individual would be expected to respond with greater levels of attempted coping efforts. Women and younger age groups have tended to rate and experience life change events as causing a higher degree of stress than do men and older respondents (Bourque and Back, 1977; Ekehammer, 1974) perhaps due to gender role differences and the accumulation of experience with stress with age. As such, women and younger age groups would be expected to exhibit greater amounts of attempted coping strategies.

- HoB.2 Men will use greater amounts of problem-focused coping and cognitive displacement, while women will seek social support.

Since cognitive-interactionist theory posits that personality traits or cognitive styles affect stress responses, gender differences in personality traits would be expected

to affect coping behaviors. The male gender role is said to be aggressive and inexpressive indicating a tendency to react to stress by problem-focused coping and cognitive displacement. The female gender role, on the other hand, is said to be more passive and expressive indicating they would tend to seek out social support as a means of coping more often than would males (Bell, 1981).

HoB.3 Older people will use greater amounts of problem-focused coping and will make less use of cognitive displacement or seeking social support than will younger people.

As men and women bring their gender roles to stressful encounters, so elderly people bring their greater knowledge and experience with coping across their life span. There is some evidence that dealing with stress can sometimes promote coping capacity (Haan, 1982) and this would indicate that elderly people should be able to make more accurate primary and secondary appraisals of a stressful event and the resources they have available to assist them in the coping process. Cognitive-interactionist theory would then lead to the conclusion that older people will be more able to take a problem-focused approach to coping with stress and will make less use of cognitive displacement or the seeking of social support for assistance (regardless of their prior use of social support) because they are better equipped to deal with the stress on their own.

HoB.4 Higher educational attainment will be related to greater use of problem-focused coping and less use of cognitive displacement and the seeking of social support.

Part of the educational process entails training in logical problem-solving with an emphasis on individual effort and ability to solve problems. Individuals with higher educational attainment would be expected to bring this training with them to a stressful encounter, and indeed one study has found that persons with higher educations tend to make more realistic appraisals of stressful situations (Menaghan, 1983a). Cognitive-interactionist theory would predict that educational training would make an individual more likely to use problem-focused coping and less likely to use cognitive displacement or the seeking of social support.

HoB.5 Higher occupational status will be positively related to problem-focused coping and to coping by seeking social support; however, it will be negatively related to cognitive displacement.

The socialization and educational experiences of working class individuals seem to provide them with fewer of the skills and social competencies that are necessary to cope with life's stresses (Kessler and Cleary, 1980). Persons with low occupational status appear to possess negative personality characteristics, such as low self-esteem and fatalism, and to have less access to social supports than do persons of high occupational status (Brown and Harris, 1978;

Wheaton, 1980). Low occupational status individuals also have less access to monetary means of coping with stressors. Given these characteristics, cognitive-interactionist theory would predict that lower occupational status individuals would appraise a stressful encounter as holding few options for coping, while higher occupational status individuals would see (and actually have) greater options for coping. Therefore, higher occupational status individuals will make greater use of problem-focused coping and will seek social support more often than will lower occupational status individuals. Cognitive displacement would be one of the few coping options available to lower occupational status individuals and it is anticipated they will make greater use of cognitive displacement than will higher occupational status individuals.

HoB.6 The greater the level of social integration, the less the use of cognitive displacement and the greater the use of problem-solving and seeking of social support.

Feelings of anomie, as opposed to feelings of social integration, connote a certain degree of social isolation and self-preoccupation. People with high anomie would be expected to appraise a stressful situation as having few alternatives available to deal with the problem. Their self-preoccupation would interfere with the use of problem-focused coping behaviors and their feelings of isolation

would not encourage them to seek social support as a means of coping. As a result, they would be most likely to use cognitive displacement as one of the few coping options available to them. In contrast, persons who feel a high degree of social integration would be more able to concentrate on their stressor (problem-focused coping) and would also be more likely to seek the support of others as a strategy for coping.

HoB.7 The greater an individual's religiosity, the greater the use of cognitive displacement and seeking friends and the less the use of problem-focused coping.

Religious doctrine and training often emphasizes that one should focus on the good or 'bright' side of misfortune, rather than focusing on the misfortune itself (Moberg, 1965; 1972). Highly religious persons may also be more likely to seek out the comfort and prayerful support of fellow believers. As such, cognitive-interactionist theory would predict that an individual's commitment to their religious beliefs would affect their coping responses. Those who are more religious would be expected to use strategies such as cognitive displacement and seeking social support, while those who are less religious would use problem-focused coping.

HoB.8 Presence of a spouse will be positively related to the use of problem-focused coping and the

seeking of social support, and negatively related to the use of cognitive displacement.

HoB.9 People with qualitatively richer social support relationships will use more problem-focused coping and seeking social support, and will use less cognitive displacement.

Social support from a spouse or from others may affect coping in two ways (Kessler, Price and Wortman, 1985). First, they may reduce subjective perceptions of the severity of the stress through comforting cognitions of their availability to be called upon for assistance. Second, they may actually be called upon to provide more information about the stressor and to share potential solutions as well as their own prior experience with a similar stressor. During a stressful encounter, cognitive-interactionist theory would suggest that individuals who perceive an availability of social supports, such as a spouse or other close relationships, would appraise the situation as less stressful. The mere perception that social support is present would then encourage both greater use of problem-focused coping due to decreased anxiety and the seeking of social support for comfort and information because they are 'available.' Individuals without a spouse or rich social support relationships would be more likely to turn to cognitive displacement as a means of coping with stress since that would be one of their few coping alternatives.

Since men are known to rely more on their wives for support while women tend to seek support from other close friends, the presence of a spouse is expected to allow men to focus more on the stressor at hand and to decrease their need to seek additional social support. Likewise, the presence of strong social support relationships would encourage women to seek out such social supports in times of stress and would allow them to focus more on the stressor.

CHAPTER IV. METHODS

This chapter begins with a detailed account of the sampling and data collection procedures used to obtain the data analyzed in this study. The demographic characteristics of the final sample, such as age, sex and marital status, are then briefly described. The discussion of the sample is followed by an overview of the measures used to operationalize the thirteen theoretical concepts employed in the study, and the chapter ends with an explanation of the statistical procedures used to test the hypotheses that were outlined in the previous chapter.

Sample and Data Collection

The data employed in this dissertation were collected as part of an independently funded grant administered by Iowa State University. The data were gathered from a survey of residents living in a small, rural, midwestern community, population 1,143 according to the 1980 census. The sampling frame consisted of adults (18 years and older) residing both in the community and the immediately surrounding school district. Using the local community phone book and a local school district map, approximately 750 households were identified as primary sampling units. Four hundred names and phone numbers were then randomly selected to be contacted as part of the survey.

Microcomputer-assisted telephone interviews were conducted to collect the data. (See Hoyt et al., 1983 for a detailed description of microcomputer-assisted telephone interviewing.) Once a selected household was successfully contacted by phone, a simple random selection method was utilized to choose which adult household member (18 years of age or older) would be interviewed. During six weeks of interviewing in October and November of 1982, a total of 285 area households were successfully interviewed for a total response rate of 71 percent. For the most part, those who were not successfully interviewed represent persons who were not at home when telephoned. The remainder represent those who when contacted, refused to participate in the survey.

The telephone interview questionnaire was approximately thirty minutes in length and consisted of a variety of questions concerning friendship networks, voluntary organizational involvement, recreation and community satisfaction, and health. Information regarding life events stress and coping behaviors, as well as coping resources, such as education and social support relationships, was also gathered. The Iowa State University Committee on the Use of Human Subjects in Research reviewed this project and concluded that the rights and welfare of the human subjects were adequately protected, that risks were outweighed by the potential benefits and expected value of the knowledge

sought, that confidentiality of data was assured and that informed consent was obtained by appropriate procedures.

Sample Characteristics

As presented in Table 1, 45 percent of those sampled were male and 55 percent were female. Over one-third (38%) of the respondents were 45 to 64 years of age and 25 percent were 65 and older. With the exception of an over-sampling of married respondents (i.e., 76% of the sample was married compared to 66% in the community), the distribution of sample characteristics closely approximated the 1980 U.S. Census report for the community (Table 1).

Table 1. A comparison of the sample with 1980 census data for the community

Characteristic	Community Sample		1980 Census	
	Percent	N	Percent	N
Sex: Male	41.4	118	45.3	390
Female	58.6	167	54.7	471
Age: 18-24	7.1	20	10.8	93
25-44	30.1	85	25.9	223
45-64	37.6	106	29.2	251
65---	25.1	71	34.1	294
Marital Status:				
Married	76.3	216	66.2	609
Alone	23.7	67	33.8	311

Forty-eight percent of those interviewed were working full-time and 11 percent were working part-time. Twenty-four percent indicated they were full-time homemakers and an additional 13 percent indicated they were retired. When asked about what type of work they normally did or had done, 23 percent replied that they were involved in professional or managerial work. Nineteen percent indicated they were full-time farmers (an additional three percent were farm laborers). Seventeen percent were service workers and ten percent were clerical workers. Eight percent responded that they were homemakers, and the remainder were distributed in nonfarm labor, crafts, operatives and sales occupations.

Operationalization of Concepts

As noted before, this study was mainly concerned with thirteen conceptual variables. They included health, stress, age, sex, six hypothesized coping resources and three hypothesized coping strategies. Health was used as the major dependent variable, while age and gender were used for comparative purposes. The hypothesized coping resources consisted of education, occupational status, marital status, social integration, religiosity, and social support. Coping behaviors consisted of problem-focused coping, coping by cognitive displacement, and coping by seeking social sup-

port. The operationalization of each variable is explained in more detail below.

Health

Health as a concept does not necessarily refer merely to the presence or absence of disease. Health has often referred to a complete state of physical, mental and social well-being (Hennes, 1972; Sackett, et al., 1977). Individuals appear to conceive of health in this more generalized sense, taking into consideration not only absence of physical symptoms, but also activity levels and general feeling-states (Graney and Zimmerman, 1981; Hennes, 1972). However, standards for what is 'healthy' are derived from cultural values, and in the U.S., self-reported health appears to be related to age. Older people who have physical symptoms often rate their health highly relative to the expected normative or stereotypical functioning of others in their age group (Graney and Zimmerman, 1981; Hennes, 1972; LaRue et al., 1979), and, their self-health ratings more accurately predicted mortality than physician's ratings (LaRue et al., 1979).

Heenes (1972) concluded that measures of health should take into consideration that many respondents who say that they 'feel' healthy, are healthy. Self-reported health measures have consistently been highly correlated with clin-

ical assessments of physical, mental, and social health by physicians (Sackett, et al., 1977), especially among older people (Graney and Zimmerman, 1981; LaRue, et al., 1979). Research has also suggested that self-reported health is more closely related to attitudes and behaviors than are medical evaluations of health (Graney and Zimmerman, 1981). As such, self-reported health appears to measure overall physical, mental and social well-being.

In this study, health was measured by a single item indicator that allowed each respondent to rate their own health. Each respondent was asked the following question: "Would you say your own health, in general, is excellent, good, fair, or poor?" Responses to this question were coded such that high scores indicated poor health and low scores indicated excellent health. While scores ranged from one to four, the mean was 1.64 with a standard deviation of 0.67. This single item self-rated health measure had a correlation coefficient of 0.31 (significant at the .001 level) with the respondent's amount of reported illness during the past twelve months.

Stress

Stress was operationalized by items from the Life Events Questionnaire--Short Form developed by Horowitz and Wilner (1980). This measure is a checklist of events which

are sometimes regarded as important experiences encountered by people in the course of their everyday lives, such as financial difficulties, getting married, being hospitalized, or losing a loved-one. Subjects were asked which of the events they had personally experienced during the last year, and, for each event they had experienced, they were then asked how many times they had experienced it. Twenty of the original events in the scale were deleted for two reasons. First, several items were particularly sensitive to ask in a telephone interview format, such as experiencing "A miscarriage or abortion" or having "An extra-marital affair". Second, it was important to keep the telephone interview as brief as possible. A total of 22 events were included on the interview schedule.

Life change stress scores were obtained by multiplying the number of times each event reportedly occurred during the previous year by a readjustment weighting for that event, then summing the results across all 22 events. The readjustment weightings were based on the amount of life change expected from each event. For example death of a spouse had a weighting of 67, while a minor violation of the law had a weighting of only 7. Appendix A has a complete listing of the items used and the weightings assigned to each. Scores ranged from zero to 360 with high scores indicating high life change stress. Forty-five percent of

the sample received stress scores of 50 or less. The mean, however, was 71 with a standard deviation of 67.

Sex and age

Gender was equated with an individual's biological sex for purposes of this study and sex was measured by the simple question, "Are you male or female?" As previously noted, 45 percent of those sampled responded that they were male and 55 percent that they were female. To measure age, respondents were asked, "What was your age on your last birthday?" The distinction 'on your last birthday' was made to emphasize that current chronological age was the correct response, not impending age, nor felt age. Only nine percent of the sample was below the age of 25 years, 68 percent were between the ages of 25 and 64 years, and 25 percent were over 65 years old. Mean age was 51.

Education

Educational attainment was determined by a single item indicator which asked, "How many years of schooling have you completed?" All responses were coded as the total number of years the respondent reported they had received some type of formal education. Scores ranged from one to 21 with a mean of 12.6 and a standard deviation of 2.6. High scores indicated higher educational attainment.

Occupational status

Occupation was measured by a series of questions regarding each respondent's current and/or past work history. First, it was determined if the respondent was currently working. Those who indicated they were not currently employed were asked, "Did you ever work outside the home for as long as one year?" All respondents who were currently working or who responded that they had worked outside of the home for one year or more were asked the following open-ended question, "What kind of work do (did) you normally do?" Interviewers were instructed to obtain job title, duties, and whether the respondent was self-employed or an employee. If the respondent indicated they farmed, interviewers were instructed to ask whether the respondent owned or rented land. The results from this open-ended question were then coded into the following response categories such that high scores would indicate high occupational prestige:

- | | |
|---------------------------|--------------------------|
| 1. Full-time homemaker | 7. Craftsperson |
| 2. Farm laborer | 8. Sales |
| 3. Service worker | 9. Clerical |
| 4. Prvt. household worker | 10. Self-employed farmer |
| 5. Non-farm laborer | 11. Managerial |
| 6. Operatives | 12. Professional |

Occupational status then ranged from one to 12 and had a mean of 7.45 with a standard deviation of 3.88.

Marital status

Marital status was assessed by the simple question, "Are you married, never married, widowed, divorced, or separated?" For ease of interpretation as a social resource, the later four categories were collapsed into a single category indicating the lack of a spousal resource. As a result, the final measure was bifurcated such that a high score indicated the respondent had a spousal resource, and a low score indicated the respondent had no spousal resource. The mean for marital status was 1.8 with a standard deviation of 0.4.

Social integration

A series of five statements regarding feelings of anomie and/or depression were originally included on the interview schedule. Factor analysis, item-to-item correlations and reliability analyses, however, indicated that only three of the five items created a reliable scale. These three items regarded feelings that "people don't really care" about others, that the respondent was "not a part of things", and that they had no one they could depend on. Respondents could answer that they agreed, were uncertain, or disagreed with each statement. The full text of each of the three items and their factor loadings are presented in Appendix A. Cronbach's reliability alpha for the scale was

0.51 and scores ranged from three to nine with a mean of 7.82 and standard deviation of 1.6. The scale was coded such that a high score could be equated with high social integration and a low score with feelings of anomie.

Religiosity

Two questions--one regarding church attendance and another regarding the importance of religion--were summed to determine each respondent's degree of religiosity. The first question asked, "How often would you say you attend religious services?" Responses could vary from weekly to once a year. The second question asked, "In general, how important is religion to you personally? Would you say it is very important, somewhat important, not too important, or not at all important?" When summed, scores on religiosity varied from one, indicating low religiosity, to ten, indicating high religiosity. The scale mean was 8.6; its standard deviation was 2.1; and its reliability alpha was 0.68.

Social support

Each respondent was asked a series of questions regarding their three closest friends or relatives who were not currently living with them in their household. Two questions specifically referred to the quality of their relationships with their closest friends. These two ques-

tions were asked about each friend the respondent indicated they had. The first question referred to whether the respondent would feel comfortable discussing their personal problems with each friend. The second question asked whether the respondent would feel comfortable asking each friend for some type of help, such as financial or physical assistance. Responses were coded into the following four categories: very comfortable, somewhat comfortable, somewhat uncomfortable, or very uncomfortable. When a respondent indicated they had no friends, they received a score of zero. Otherwise, the scores from both questions were summed across the number of friends each respondent indicated they had. The reliability alpha for this scale was 0.91 and scores could range from one to 24 with higher scores indicating a greater perception of social support. The scale mean was 18.36 with a standard deviation of 6.45. The exact wording of these questions is presented in Appendix A.

Coping strategies

A series of ten questions regarding how people attempt to cope with hypothetical stressful events, such as financial problems, serious illness, and having to move, were included on the interview schedule. Respondents were asked to indicate how often they engaged in each of the coping

behaviors "when under a lot of stress." These coping behaviors included such items as, "I turn to work or some other activity to take my mind off things," "I seek out the sympathy and understanding of others," and "I try to recall how I have dealt with similar situations in the past." Three responses to these items were possible: often, sometimes, or seldom.

Coping strategies were originally conceived as consisting of two separate coping styles, emotion-focused and problem-focused. However, when subjected to factor analysis and then cross checks of item-to-item correlations and

Table 2. Varimax rotated factor loadings for the coping strategy scales

Items	<u>Coping Strategies</u>		
	PrblmFocus	CogDisplac	SeekOthers
Do something to change	0.4676	0.5564	-0.1255
Recall prior experience	0.6568	0.1066	0.2758
Contemplate outcomes	0.8149	0.0419	-0.0932
Think of others' response	0.7024	0.0498	0.1969
Take mind off things	0.1185	0.7147	0.0307
Think about good things	-0.0483	0.7185	0.1450
Seek sympathy of others	0.0796	-0.1288	0.8101
Talk it over with others	0.1427	0.2758	0.6985

reliability analyses, three coping behavior scales emerged. Based on what appeared to be the underlying communality of the items, as presented in Table 2, the three scales were labeled as problem-focused coping, coping by cognitive displacement and coping by seeking friends. Problem-focused coping refers to a focus on the stressful situation and potential ways to resolve it. In contrast, cognitive displacement is an attempt to not think about the stressful situation either by concentrating on something else in the environment or by redefining the situation as not stressful. As implied in its label, coping by seeking social support indicates a desire seek others and ask for their advice or receive their sympathy and understanding when experiencing stress. The exact items included in each scale are listed in Appendix A along with the Cronbach's reliability alpha for each. For each scale, a high score indicated that the respondent was reporting frequent use of that particular behavior when coping with stress.

Statistical Procedures

Since both theory and prior research indicate that differences by sex and age are present in the relationships between stress, coping resources, and self-rated health, separate analyses were performed by sex and by age. These separate analyses were used to determine whether stress and

the various coping resources and strategies had different effects on the self-rated health of men, women, and younger and older respondents. Ideally, the sample would have been divided into four categories--younger and older men and younger and older women. Unfortunately, this division would have resulted in an unacceptably small number of respondents in each category given the relatively small sample size (N=285). For example, there were only 44 men over the age of 54.

Younger respondents were considered to be between the ages of 18 and 54 and older respondents were grouped from age 55 to 92. This age grouping was chosen for several reasons. First, American culture considers persons age 55 and over to be relatively 'old' (Atchley, 1985). Many companies allow for early retirement benefits beginning at age 55 and a large number of people begin to make specific plans for their retirement years around the age of 55. Second, psychological studies have discovered a shift in cognitive perceptions of age at approximately age 50 to 60 (Atchley, 1983). Individual perceptions often shift from a focus on how many years have been lived to a focus on how many years are left to be lived. Also, beginning at approximately age 55, there may be a shift in the types of stressors experienced by individuals. There is some evidence that the number of stressful losses increases--children leave

home, parents and other elderly relatives may become ill or die, retirement is approaching, and health may be declining (Atchley, 1983; Folkman and Lazarus, 1978, 1980). Finally, this age grouping resulted in a relatively equal division of the respondents into younger and older age categories. There were 158 younger respondents and 124 older respondents, with three respondents excluded from the analysis because they failed to report their age.

A total of five separate statistical analyses were conducted to analyze differences in the relationships between stress, coping resources and strategies, and self-rated health that were outlined in Figure 5 (p. 62). First, crosstabulations of health, stress, and the coping resources and behaviors were done by sex and by age group (18 to 54 and 55 plus) to determine baseline differences in reported levels of each variable. Next, correlational analyses were conducted for each sex and age group to examine the degree of intercorrelation between self-rated health, life change stress, and the nine coping resources and strategies.

Since stress was measured with reference to events that had occurred during the past year and the coping variables were measured using a more recent time frame, it can be assumed in this study that life events stress preceded the reported presence of resources and use of strategies. However, life events stress is not predicted to have direct

effects on the six coping resources (education, occupation, marital status, social integration, religiosity, and social support), while it is predicted to have a positive direct effect on the use of the three coping strategies. Coping strategies are then regarded as having a different type of buffering effect on health--one that Lin (1986) has termed a "counteractive effect". Counteractive effect means that coping strategies are actually 'mobilized' as a result of the occurrence of high life change stress and because of their mobilization the net effect of stress on health is reduced.

To test the effects of stress and the coping resources and strategies on self-rated health, two separate hierarchical multiple regression analyses were conducted for each sex and for younger (age 18 to 54) and older (age 55 or over) respondents. The first regression was conducted in order to determine the direct or "independent" effects of stress, age, and each coping resource or strategy on self-rated health, and the second was conducted to determine the stress buffering (i.e., "interaction" or "counteractive") effects of the coping resources and strategies (Lin, 1986).

In both regression analyses, life change stress was entered on the first step to control for level of stress when examining subsequent steps. The second step consisted of age and the predicted coping resources and behaviors.

This step revealed the main effects of age and each resource or behavior on self-rated health when controlling for life change stress. In other words, the second step examined whether age and the presence of coping resources and behaviors were associated with self-rated health regardless of the amount of stress being experienced. Individuals possessing specific coping resources or behaviors were expected to be healthier than individuals without these resources or behaviors simply by virtue of the security these attributes supposedly give to an individual. A negative relationship was expected between each of these variables and self-rated health because self-rated health was coded such that low scores reflected better health ratings.

In the second regression analyses, after the independent effects were partialled out in step two, the predicted stress buffering effects of the various resources and behaviors were examined in yet a third and final step. For ease of interpretation, life change stress scores were divided by each coping resource and behavior to create nine stress interaction terms whose high scores would reflect high vulnerability to the detrimental effects of life change stress (i.e., high life change stress and low presence of each resource or behavior should lead to poor ratings of health). These stress interaction terms were added to the regression in a single step. Most were expected to be positively

related to self-rated health if the resource or strategy was indeed acting as a buffer between stress and self-rated health. A positive relationship would indicate that individuals who lacked each resource or behavior and who were experiencing high life change stress were in fact reporting poorer health.

The fifth and final analyses in this study were conducted to examine whether life change stress levels, age, and the six coping resources had any effects on reported use of the three coping strategies. Again, for each sex and age group (18 to 54 and 55 plus), three separate multiple regression analyses were run with each of the coping behaviors in turn acting as the dependent variable. Findings from these regressions were used to determine whether stress and coping resources could significantly explain the frequency with which each of the coping behaviors were reportedly used. It was predicted that stress, age, and the coping resources would affect the frequency with which each of the coping behaviors were reportedly used.

CHAPTER V. FINDINGS

Crosstabulation Analyses

The results of a crosstabulation analysis by sex of the remaining twelve variables used in this study are given in Table 3. As indicated in the Table, women were significantly more likely to report absence of a spouse due to either divorce, separation, widowhood, or never having married, while the men in the study were more likely to report being married. Women also reported greater feelings of social support and a greater level of religiosity than did the men. The women, however, reported significantly lower occupational levels than did the men. More of the women reported having occupations as service workers or as homemakers, while men reported occupations as professionals or as managerial or sales workers. Table 3 also indicates that women reported slightly greater use of cognitive displacement (ie. taking their 'mind off' the stressful situation) than did the men, though this difference was not significant at the 0.05 level. The remaining variables did not display significant sex differences. Men and women in the sample varied little in their reports of these variables.

Table 4 presents the results of a crosstabulation analysis of the dependent and independent variables by age. For purposes of this crosstabulation age was recoded such

that ages 18 to 54 are considered 'younger' and ages 55 and over are considered 'older'. As expected, there was a significant age difference in self-rated health. Self-rated health was coded such that high scores indicated 'poor' health; therefore, the older respondents were much more likely to report having 'poor' health than were the younger respondents.

Table 3. Sex differences in self-rated health and the independent variables

Variable	Chi-Square	D.F.	Significance	Gamma
Self-health	0.66	1	0.42	0.11
Stress	0.55	1	0.46	0.11
Age	2.52	1	0.11	0.21
Education	0.17	1	0.68	0.06
Occupation	4.78	1	0.03	-0.29
Marital Status	5.13	1	0.02	-0.35
Integration	1.65	1	0.20	0.18
Religiosity	6.66	1	0.01	0.33
Felt Support	7.36	1	0.01	0.35
Problem Focus	1.32	1	0.25	-0.16
Cog. Displacement	3.13	1	0.08	0.23
Seek Others	2.59	1	0.11	0.21

There were also significant age differences in education, marital status, and religiosity (Table 4). In terms of education, older respondents were more likely to report fewer years of formal schooling than were younger respondents. Significantly more of the older respondents were widowed (or otherwise without a spouse), while the younger respondents reported that they were married; and, more of the older respondents indicated that they were highly religious, while the younger respondents expressed lower levels

Table 4. Age differences in self-rated health and the remaining independent variables

Variable	Chi-Square	D.F.	Significance	Gamma
Self-health	14.47	1	0.00	0.45
Stress	0.59	1	0.44	0.11
Education	17.55	1	0.00	-0.50
Occupation	0.00	1	0.99	-0.01
Marital Status	12.50	1	0.00	-0.48
Integration	1.78	1	0.18	-0.18
Religiosity	7.05	1	0.01	0.35
Felt Support	0.11	1	0.74	0.06
Problem Focused	4.66	1	0.03	-0.28
Cog. Displacement	0.58	1	0.44	-0.11
Seek Others	0.00	1	0.99	-0.01

of religiosity. The analysis also found that the younger respondents reported significantly greater use of "problem-focused" coping than did the older respondents. None of the remaining six variables exhibited any evidence of significant age differences.

Correlational Analyses

Due to listwise deletion of missing data, 19 percent of the respondents were not included in the correlation and regression analyses. Only 93 men (out of 118 men sampled) and only 137 women (out of 167 women sampled) had complete information on all 12 variables used in the analyses of sex differences. Similarly, only 147 younger respondents (out of 158 age 54 or under) and only 83 older respondents (out of 124 age 55 and over) remained in the correlation and regression analyses that explored age differences. The majority of the respondents were lost because they failed to report their occupation. In comparing respondents who were lost with those who remained in the analyses, missing respondents were significantly older and had less education than those who remained (Appendix B).

Sex differences in the zero-order correlations between self-rated health, life change stress and the nine coping resources and strategies are shown in Table 5. Though not significant, the correlation between stress and self-rated

health was over eight times stronger for women than for men. As noted previously, self-rated health was coded such that high scores indicated 'poor' health, and since stress was coded such that high scores indicate high stress, the positive correlation means that, as predicted, men and women with high levels of stress rated their health worse than men and women with low levels of stress.

For both the men and the women in the sample, self-rated health was significantly correlated with age (Table 5). Though the correlation between age and self-rated health was stronger for men than for women, both correlations indicate that the older men and women rated their health as poorer than the younger men and women. In contrast, social integration had a significant negative correlation with the self-rated health of women, indicating that women who felt a high degree of social integration rated their health better than did women without strong feelings of integration.

For the women, life change stress was significantly correlated both with the coping strategy of seeking others and with education (Table 5). Women who reported high life change stress also reported frequent use of coping by seeking others. In contrast, education had a negative correlation with the reported level of stress among the women. Women with higher educations were reporting lower levels of

Table 5. Sex differences in the zero-order correlation coefficients

	SelfHlth		Stress		Age		Educat	
	Mn	Wm	Mn	Wm	Mn	Wm	Mn	Wm
Stress	.02	.17	1.00	1.00				
Age	.47*	.30*	.12	.01	1.00	1.00		
Educate	-.24	-.17	-.08	-.28*	-.38*	-.23*	1.00	1.00
Occupat	-.10	-.19	-.01	-.16	.09	.03	.39*	.42*
Mar Stat	.07	-.10	-.10	-.04	.14	-.34*	.14	.18
Integrat	-.06	-.22*	-.19	-.04	-.19	-.11	.24	.08
Religious	-.10	-.09	.14	-.11	.11	.07	.11	.04
Support	.08	-.01	.09	.14	.10	-.04	-.18	.02
Prbl Focs	-.13	.09	.12	.11	-.09	-.32*	.17	-.01
Cog Dsplc	-.02	-.16	-.02	.12	-.06	.03	.19	.08
Seek Othr	.04	.02	.20	.24*	.08	-.12	-.15	-.02

*Significant at ≤ 0.01 level.

Table 5. (continued)

	<u>Occupt</u>		<u>Mar Stat</u>		<u>Integrat</u>		<u>Religious</u>	
	<u>Mn</u>	<u>Wm</u>	<u>Mn</u>	<u>Wm</u>	<u>Mn</u>	<u>Wm</u>	<u>Mn</u>	<u>Wm</u>
Stress								
Age								
Education								
Occupation	1.00	1.00						
Mar Stat	.05	.01	1.00	1.00				
Integrate	.12	.04	-.10	.06	1.00	1.00		
Religious	.23	-.10	.28*	.09	.11	.16	1.00	1.00
Support	-.09	-.00	-.06	-.03	.10	.16	.10	.04
Prbl Focs	.16	.07	-.14	-.02	.12	-.04	-.04	-.11
Cog Dsplc	.13	.12	-.10	-.11	-.02	.00	.03	.02
Seek Othr	.10	.03	.04	-.04	-.12	.00	-.02	.02

Table 5. (continued)

	<u>Support</u>		<u>PrblFocs</u>		<u>Cog Dspic</u>		<u>SeekOthr</u>	
	<u>Mn</u>	<u>Wm</u>	<u>Mn</u>	<u>Wm</u>	<u>Mn</u>	<u>Wm</u>	<u>Mn</u>	<u>Wm</u>
Stress								
Age								
Education								
Occupation								
Mar Stat								
Integrat								
Religious								
Support	1.00	1.00						
Prbl Focs	.05	.11	1.00	1.00				
Cog Dspic	.03	.02	.39*	.20	1.00	1.00		
Seek Othr	.15	.04	.14	.35*	-.06	.25*	1.00	1.00

stressful life events, while women with less education were reporting higher levels of stressful life events. As expected, education was also significantly correlated with age and occupation for both men and women. While the older men and women in the study reported having less education than the younger men and women, the respondents with higher educational attainment reported higher occupational status regardless of their sex.

In Table 5, age was also negatively correlated with marital status and the use of problem-focused coping among the women, but not among the men. These correlations indicated that the older women were more likely to report having no spouse and making less use of problem-focused coping strategies than the younger women in the sample. For men, marital status had a significant positive correlation with religiosity. The men who were married reported higher levels of religiosity, than the men who were alone.

Finally, Table 5 reports that, for women, the seeking of social support as a means of coping with stress had significant, positive correlations with the use of both problem-focused coping and coping by cognitive displacement, i.e., taking your 'mind off' the stress. The more they reported seeking social support, the more they also reported using problem-focused coping or coping by cognitive displacement. Coping by 'seeking social support' was not

significantly correlated with any of the variables included in the correlational analysis for men; however, coping by cognitive displacement was significantly correlated with their use of problem-focused coping. Men who reported greater use of coping by taking their 'mind off' of the stress were also reporting greater use of the seemingly contradictory strategy of problem-focused coping.

Age differences in the zero-order correlations between self-rated health, life change stress and the ten coping resources and strategies are shown in Table 6. As indicated in the Table, age had a significant positive correlation with self-rated health among both the older and younger respondents, though the relationship was stronger among the older respondents than the younger. As expected, the older respondents were reporting poorer health. Among the younger aged respondents, education and occupational status also had significant, though negative, correlations with self-rated health. Younger respondents with higher educational attainment or higher occupational status were reporting better self-rated health than those with less education or lower occupational status. By comparison, religiosity had a significant negative correlation with the self-rated health of older respondents. Older respondents who reported a high degree of religiosity were reporting better self-rated health than those who were less religious.

Among both age groups, the coping strategy of seeking others was significantly positively correlated with life change stress (Table 6). The greater the level of stress, the more frequent the reported use of coping by seeking others. Stress also had a significant positive correlation with the use of problem-focused coping among the younger respondents. Among the older respondents, however, stress had significant negative correlations with both education and social integration. The higher an older respondent's educational attainment and the more they felt socially integrated, the less life change stress they were reporting.

A curvilinear relationship was found between age and marital status (Table 6). Among the younger respondents, age was positively related to marital status, while among the older respondents age was negatively correlated with marital status. More of the younger respondents were married as they approached middle age, while after middle age, more of the respondents reported that they were widowed. Education was negatively correlated with age for both younger and older respondents, but the correlation was weak and insignificant among the younger respondents. The older respondents were reporting less educational attainment.

There were, however, age differences in the correlation between age and the use of problem-focused coping (Table 6). Younger respondents in their late 40s or early 50s reported

Table 6. Age differences in the zero-order correlation coefficients

	<u>SelfHlth</u>		<u>Stress</u>		<u>Age</u>		<u>Educat</u>	
	<u><54</u>	<u>>55</u>	<u><54</u>	<u>>55</u>	<u><54</u>	<u>>55</u>	<u><54</u>	<u>>55</u>
Stress	.05	.18	1.00	1.00				
Age	.20*	.31*	-.05	.13	1.00	1.00		
Education	-.19*	-.09	-.07	-.35*	-.16	-.31*	1.00	1.00
Occupation	-.28*	-.06	-.10	-.17	.01	-.04	.40*	.36*
Mar Stat	.17	-.12	-.08	-.01	.20*	-.40*	.13	.08
Integrat	-.04	-.25	.02	-.28*	-.12	-.16	.08	.25
Religious	-.02	-.28*	-.06	.12	.14	-.12	.18	.02
Support	.04	.03	.12	.14	.08	.03	-.03	-.12
Prbl Focs	-.03	.15	.20*	-.00	-.27*	-.01	.06	.00
Cog Dsplc	.01	-.23	.10	.01	.09	-.14	.07	.24
Seek Othr	.05	.03	.20*	.30*	-.14	.24	.09	-.29*

*Significant at ≤ 0.01 level.

Table 6. (continued)

	<u>Occupt</u>		<u>Mar Stat</u>		<u>Integrat</u>		<u>Religious</u>	
	<u><55</u>	<u>>56</u>	<u><55</u>	<u>>56</u>	<u><55</u>	<u>>56</u>	<u><55</u>	<u>>56</u>
Stress								
Age								
Education								
Occupation	1.00	1.00						
Mar Stat	-.01	.13	1.00	1.00				
Integrat	.04	.06	-.12	.08	1.00	1.00		
Religious	.06	-.13	.25*	.05	.10	.24	1.00	1.00
Support	-.06	-.13	-.12	-.01	.14	.17	.05	.22
Prbl Focs	.11	.14	-.10	-.07	-.00	.02	-.10	-.05
Cog Dsplc	.11	.07	-.14	-.10	-.11	.19	.03	.07
Seek Othr	.01	.04	-.00	-.08	.08	-.19	.07	-.03

Table 6. (continued)

	<u>Support</u>		<u>PrblFocs</u>		<u>Cog Dspic</u>		<u>SeekOthr</u>	
	<u><55</u>	<u>>56</u>	<u><55</u>	<u>>56</u>	<u><55</u>	<u>>56</u>	<u><55</u>	<u>>56</u>
Stress								
Age								
Education								
Occupation								
Mar Stat								
Integrat								
Religious								
Support	1.00	1.00						
Prbl Focs	.07	.03	1.00	1.00				
Cog Dspic	.10	-.02	.31*	.20	1.00	1.00		
Seek Othr	.18	.04	.24*	.27*	.11	.18	1.00	1.00

significantly less use of problem-focused coping, than those who were in their late teens or early 20s. Among respondents age 55 and over, there was virtually no correlation between problem-focused coping and age.

Education had significant positive correlations with occupational status for both younger and older respondents, indicating that greater educational attainment was related to higher occupational status (Table 6). Among the older respondents, education was also significantly related to seeking others as a strategy to cope with stress. The highly educated older respondents reported significantly less use of seeking others than older respondents who were less educated. Among younger respondents, marital status had a significant, positive correlation with religiosity. The younger respondents who were married reported higher levels of religiosity than did those who were not.

Finally, Table 6 presents three significant zero-order correlations among the coping strategies. Younger respondents who reported frequent use of problem-focused coping as a strategy for dealing with stress also reported frequent use of both cognitive displacement and seeking social support. Older respondents had the same pattern of response, however, for them, only the correlation between problem-focused coping and coping by seeking social support was statistically significant.

Direct Effects

As presented in Tables 5 and 6, the zero-order correlation coefficients between life change stress and self-rated health were as follows: .02 for men, .17 for women, .05 for respondents younger than age 54, and .18 for respondents older than age 55. After using multiple regression to partial out the direct effects of coping resources and strategies, beta coefficients between stress and self-rated health, as presented in Table 7, were: .01 for men, .14 for women, .01 for younger respondents, and .21 for older respondents. These coefficients indicate that stress had no effect on self-rated health among men and younger respondents. In contrast, stress did approach statistical significance in its relationship with the self-rated health of women and older respondents. Women and older respondents who reported higher levels of stress were rating their health worse than those who reported low stress levels.

Table 7 also presents, by sex and by age, the beta coefficients and their associated T-significance for the regression of age and the nine proposed coping resources and strategies on self-rated health. As noted previously, many respondents were excluded from these regression analyses due to listwise deletion of missing data.

Among the men, only age was significantly related to self-rated health (Table 7). The positive beta weight for

age indicates that the older men in the study were reporting poorer self-rated health than the younger men. The remaining variables in this analysis did not approach even a minimally acceptable level of significance.

Like the men, age had a significant positive relationship with the women's self-rated health (Table 7). Older women reported poorer health than younger women. In contrast to men, life change stress approached significance in its relationship with self-rated health among the women. Women who were under greater amounts of life change stress rated their health worse than did women under lower levels of stress. For the men, there was virtually no relationship at all between life change stress and self-rated health.

In addition to age and stress, three of the coping resources and strategies had significant effects on women's self-rated health and a fourth approached statistical significance (Table 7). Of the proposed coping resources, occupational status and social integration each had negative relationships with women's self-rated health, indicating that possessing these characteristics served to improve women's health ratings. While the beneficial effect from occupational status was significant, the effect of social integration only approached statistical significance. Two of the coping strategies had significant effects on women's self-rated health. Unfortunately, the use of problem-

Table 7. Beta coefficients by sex and age for the main effects regressed on self-rated health

Variable	Men		Women		Young		Old	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Stress	.01	.93	.14	.09	.01	.89	.21	.07
Age	.49	.00	.41	.00	.17	.06	.27	.03
Educat	-.00	.98	.09	.34	-.09	.31	.17	.18
Occption	-.11	.34	-.21	.02	-.25	.00	-.11	.34
MarStat	.05	.63	.02	.76	.16	.07	-.00	.97
Integrat	.09	.40	-.15	.06	.02	.84	-.12	.31
Religious	-.16	.14	-.08	.34	-.02	.81	-.26	.02
Support	.03	.77	-.02	.84	.00	.95	.06	.54
PrblFocs	-.12	.27	.24	.01	.03	.74	.22	.04
CogDsplic	.08	.44	-.21	.01	.04	.68	-.22	.06
SeekOthr	.03	.76	.02	.83	.07	.39	-.10	.40
R ²	.27		.27		.15		.30	

focused coping significantly decreased positive health ratings, while the use of cognitive displacement significantly improved women's health ratings. None of the remaining variables appeared to affect women's self-health ratings.

The regression analyses exploring age differences in predictors of self-rated health are also presented in Table 7. As with the men, life change stress had no appreciable

effect on the self-rated health of the younger respondents. In fact, only one of the eleven relationships analyzed was significantly related to the self-rated health of the younger respondents, and that was occupational status. Age and marital status, however, did approach statistical significance. The effect of occupational status was negative, indicating that, as predicted, younger respondents with high occupational status rated their health more favorably than did those with low occupational status. The effects of age and marital status, in contrast, were positive. Respondents who were in their late 40s or early 50s rated their health worse than those who were in their late teens or early 20s, and, younger respondents who were married rated their health worse than those who had no spousal resource.

As with the women, life change stress approached statistical significance among the older respondents (Table 7). Older respondents who reported high life change stress rated their health poorer than those who were experiencing little stress. Age and religiosity also had significant effects on the self-rated health of the older respondents; however, the effect of age was detrimental, while the effect of religiosity was beneficial. The oldest respondents were rating their health worse than those who were in their late 50s, and, the older respondents who were highly religious rated their health better than those who were not very religious.

The remaining coping resource variables were all statistically insignificant.

Of the three coping strategies, problem-focused coping was statistically significant and coping by cognitive displacement approached statistical significance among the older respondents (Table 7). The use of problem-focused coping, however, was detrimental to the older respondents' health ratings, while the use of cognitive displacement had beneficial effects. The more the older respondents reported using cognitive displacement as a strategy to deal with stress, the better they rated their health.

Buffering Effects

To examine whether the coping resources and strategies actually buffered ratings of health during times of high stress, recall that individual life change stress scores were divided by scores from each of the nine resources and strategies. As a result of each division, scores remained high if an individual was reporting high stress and had low presence of each coping resource or strategy. Conversely, scores were very low if they reported low stress and had high presence of each resource or strategy. These stress interaction terms were then added to the previous regression model in a single step. Assuming a buffer effect, the interaction terms should be positively related to poor self-

rated health (i.e., high stress and low presence of resources or strategies should increase reports of poor health).

It is important to note at this time that adding this step to the regression model probably introduced some degree of multicollinearity. The Pearson correlation coefficients between stress and the stress interaction terms were as high as 0.93 and the correlations among the stress interaction terms were as high as 0.91 (Appendix C). This high degree of intercorrelation violates the assumption that the independent variables are not highly correlated with each other. Multicollinearity appears to impair the accuracy and stability of beta coefficients depending on the severity of the intercorrelation and the importance of the variables that are intercorrelated (Koutsoyiannis, 1983). As Koutsoyiannis (1983, p. 236) states, "the instability of the estimates may be so serious as to even cause a change in the sign of the parameter estimates as the degree of collinearity increases." Omitting the stress interaction terms from the model would also yield biased estimates of the effects of the remaining variables since their absence introduces misspecification error (Koutsoyiannis, 1983).

Table 8 contains the beta coefficients and T-significance, by sex and by age, for each variable in this expanded model. For the men, age continued to have the only signifi-

cant detrimental effect on self-rated health as had been the case in the direct effects model. Each of the remaining nineteen variables, including stress, were statistically insignificant.

Among the women, stress not only dropped in its significance, but the direction of its effect changed after the stress interaction terms were added to the model (Table 8). While problem-focused coping and coping by cognitive displacement were significant in the direct effects model, they only approached statistical significance in this expanded model, and, social integration also became insignificant. These changes in direction and/or significance level could be either due to the partialing out of the stress buffering effects or due to multicollinearity.

In contrast to the changes noted above, the main effects of both age and occupation remained predictors of women's self-rated health once the interaction terms were added to the model (Table 8). Older women and women of lower occupational status rated their health significantly worse than younger women or women of higher occupational status. None of the nine interaction terms had a significant relationship with the women's self-rated health.

For respondents age 54 or younger, the effect of age on their self-rated health continued to approach statistical significance in the expanded model, and occupation also con-

tinued to have significant effects (Table 8). The respondents in their late 40s or early 50s rated their health poorer than did the respondents who were in their late teens or early 20s, and higher occupational status was negatively related to the younger respondents self-rated health indicating a beneficial effect from high occupational attainment. Marital status, however, no longer approached statistical significance. Again, this change could be due to either the partialing out of the interaction effects or to multicollinearity. None of the interaction terms in the model approached a minimally acceptable level of significance.

In the expanded model (Table 8), age was the only significant variable associated with the self-rated health of the older respondents (age 55 plus). As in the direct effects model, the oldest respondents rated their health worse than those in their late 50s and early 60s. Though religiosity and the use of problem-focused coping had been significant in the main effects model, in the expanded model, religiosity was not significant and problem-focused coping now only approached statistical significance. Greater use of problem-focused coping continued to be associated with poorer ratings of health. In addition, stress and coping by cognitive displacement no longer approached statistical significance. Once again, these changes could be due to

Table 8. Beta coefficients by sex and age for the main and interaction effects regressed on self-rated health

Variable	Men		Women		Young		Old	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Stress	.01	.99	-.10	.86	.10	.89	.20	.84
Age	.52	.00	.40	.00	.18	.06	.29	.03
Educat	-.12	.46	.18	.14	-.09	.33	.16	.41
Occption	-.17	.31	-.29	.01	-.32	.01	-.15	.33
MarStat	-.07	.67	.02	.91	.16	.20	.05	.78
Integrat	.18	.28	-.10	.47	.06	.65	-.23	.26
Religious	-.18	.26	-.09	.38	-.01	.92	-.22	.21
Support	.06	.64	-.04	.66	-.08	.44	.17	.24
PrblFocs	-.07	.67	.20	.11	-.05	.73	.30	.08
CogDsplc	.10	.61	-.22	.07	.10	.46	-.27	.18
SeekOthr	.14	.34	.07	.58	.10	.39	-.05	.78
SEducat	-.49	.20	.44	.27	.16	.75	.03	.96
SOccupat	-.12	.59	-.13	.38	-.10	.54	-.03	.87
SMarried	-.30	.46	-.04	.89	-.04	.92	.09	.83
SIntegra	.24	.49	.17	.65	.18	.62	-.25	.55
SReligio	-.05	.82	-.00	.98	.04	.85	.07	.80
SSupport	.08	.59	-.03	.74	-.16	.15	.16	.29
SCpPrblm	.28	.51	-.16	.64	-.35	.46	.17	.69
SCpDsplc	.04	.94	-.15	.71	.20	.62	-.26	.66
SCpOther	.30	.36	.14	.57	.02	.93	.08	.81

either the addition of the interaction effects to the model or else to the effects of multicollinearity. As with both sexes and among the younger respondents, none of the stress interaction terms were statistically significant in the analysis of older respondents.

From the main effects model (Table 7), which regressed life change stress, age, and the nine coping resources and strategies upon self-rated health, the adjusted R^2 value for men was 0.17. When the nine interaction terms were added to the model (Table 8), the final adjusted R^2 value for men dropped to 0.14. For women, the main effects adjusted R^2 was 0.20, while for the full model it fell to 0.16. The adjusted R^2 for young respondents from the main effects model was 0.08 and for older respondents it was 0.19. In the full model, these final adjusted R^2 values were 0.06 and 0.11 respectively. Evidently, the interaction terms add little to the model, since stress, age and the main effects of the resources and strategies explain more of the variance in self-rated health as when the interaction terms are present. Since the R^2 values for men, women and older respondents were higher than those for the younger respondents, the model of stress being tested here seems more applicable to men, women and older respondents.

In an effort to determine if the effects of multicollinearity were substantial in masking the effects of stress,

age and the coping resources and strategies on self-rated health, yet another hierarchical multiple regression analysis was done in which the interaction terms were added to the model using stepwise forward inclusion. Using this method, the findings were very similar to the results from entering the nine interaction terms in a single step. None of the stress interaction terms entered the model at an acceptable level of statistical significance for either sex or age group. When entered after controlling for the direct effects of stress, age, and the nine coping resources and strategies on self-rated health, the stress interaction term for education approached statistical significance for the men and the stress interaction term for social support approached statistical significance for the younger respondents.

For men, the stress interaction term for education would have entered the model with a T-significance of 0.10 and a beta weight of -0.56, and, for younger respondents, the stress interaction term for social support would have entered the model with a T-significance of 0.12 and a beta weight of -0.16. As in the previous analysis, higher educational attainment tended to be detrimental for men's self-rated health when they were under high life change stress. After entering the stress interaction term for education, however, the direct effect of stress approached statistical

significance for the men, with a T-significance of 0.11 and a beta weight of 0.48, and the R^2 increased from 0.27 to 0.30. As discovered in the previous analysis, the presence of social support still tended to be detrimental to the self-rated health of younger respondents' who were experiencing high life change stress though its effect now approached statistical significance. After the stress/social support interaction term entered the regression, the direct effects of social integration and social support remained insignificant, but became beneficial for the younger respondents' self-rated health and the R^2 increased from 0.15 to 0.17.

These effects might have been significantly affected by the presence of multicollinearity in the previous analyses; however, the stepwise model introduces yet another problem. By omitting some or all of the stress interaction terms, specification error results since the effects of the variables remaining in the model are affected by the absence of the interaction variables. Theoretically, the interaction variables should all have been included in the analysis. It is as yet unknown whether the effects of multicollinearity are more serious than the effects of mis-specification of the model (Koutsoyiannis, 1983).

Analysis of Coping Strategies

Table 9 presents, by sex and by age, the regression coefficients and T-significance for stress, age and the six coping resources regressed on problem-focused coping. The men's use of problem-focused coping was not significantly effected by any of the variables, and, for the women, only age had a significant effect on their use of problem-focused coping. Older women reported less use of problem-focused coping than younger women. However, the effect of occupational status approached statistical significance among the women indicating that higher occupational status tended to influence higher reported use of problem-focused coping strategies.

For the younger respondents, both stress and age had significant effects on their reports of problem-focused coping (Table 9). Higher levels of stress encouraged greater use of problem-focused coping, while approaching middle age apparently discouraged the use of problem-focused coping. Higher occupational status also encouraged greater use of problem-focused coping for these younger respondents, and its effect was approaching statistical significance. The remaining effects were insignificant. In contrast to the young, none of the eight variables used to predict use of problem-focused coping had a significant effect among the older respondents.

Table 9. Beta coefficients by sex and age for the coping resources regressed on problem-focused coping

Variable	Men		Women		Young		Old	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Stress	.15	.17	.08	.38	.18	.02	.02	.87
Age	-.04	.75	-.39	.00	-.27	.00	-.07	.58
Educat	.13	.32	-.11	.26	-.01	.94	-.07	.60
Occption	.14	.25	.14	.12	.14	.11	.18	.16
MarStat	-.10	.36	-.12	.17	-.01	.94	-.12	.34
Integrat	.08	.48	-.08	.36	-.05	.51	.04	.75
Religious	-.09	.44	-.04	.65	-.05	.53	-.05	.66
Support	.08	.49	.10	.24	.09	.26	.05	.68
R ²	.10		.16		.14		.04	

The regression analyses for cognitive displacement are presented in Table 10 by sex and by age. For the men, the Table reveals that all of the variables used in the analysis were insignificant in their association with the use of cognitive displacement; however, the positive effect of educational attainment approached statistical significance, indicating that education promoted the use of cognitive displacement among the men. As with men, none of the eight variables were statistically significant among the women, though stress did approach statistical significance. Higher

stress levels tended to increase the use of cognitive displacement among the women.

Among the younger respondents, only marital status was significantly related to their use of cognitive displacement (Table 10). Younger respondents who were married reported less use of cognitive displacement than those who were single. Social integration had a similar effect on cognitive displacement for the younger respondents; however, its effect only approached statistical significance. The re-

Table 10. Beta coefficients by sex and age for the coping resources regressed on cognitive displacement

Variable	<u>Men</u>		<u>Women</u>		<u>Young</u>		<u>Old</u>	
	<u>Beta</u>	<u>Sig.</u>	<u>Beta</u>	<u>Sig.</u>	<u>Beta</u>	<u>Sig.</u>	<u>Beta</u>	<u>Sig.</u>
Stress	-.05	.62	.17	.06	.10	.20	.16	.19
Age	.02	.87	-.00	.98	.12	.18	-.15	.25
Educat	.23	.08	.10	.30	.09	.34	.20	.12
Occption	.05	.66	.10	.28	.09	.31	.03	.83
MarStat	-.16	.16	-.13	.15	-.19	.03	-.20	.10
Integrat	-.11	.32	-.00	.97	-.15	.08	.18	.14
Religious	.05	.68	.06	.52	.06	.52	.01	.95
Support	.08	.46	-.02	.84	.08	.32	-.04	.69
R ²	.07		.06		.09		.13	

maintaining variables (i.e., stress, age, education, occupation, religiosity and social support) were insignificant. Only marital status approached statistical significance in its effect on the use of cognitive displacement among the older respondents. Among these older respondents, presence of a spouse tended to decrease the use of cognitive displacement as a strategy to deal with stress.

Table 11 contains the beta weights and T-significance for the regression analyses of 'seeking social support' by age and by sex. Occupational status was significantly related to the seeking of social support among the men, and stress and educational attainment approached statistical significance. Higher levels of stress increase men's reported use of seeking others, while their higher educational attainment repressed their use of this coping strategy. For women, only stress was significantly related to their reported use of seeking social support and its effect was positive, indicating that the greater the level of stress the more they reported seeking social support to cope with stress. The effect of age also approached statistical significance among the women, but its effect was negative, indicating that older age tended to repress seeking social support as a means to cope with stress.

As with the women, stress had a significant positive relationship with reported use of seeking social support

among the younger respondents, and the negative effect of age approached statistical significance (Table 11). Higher stress increased reports of seeking others, while older age repressed reports of seeking others. Presence of social support also significantly increased the younger respondents use of seeking social support, but the remaining five variables were insignificant in their effects. None of the variables were significantly related to the older respondents reported use of seeking social support. Only stress and education approached statistical significance, and,

Table 11. Beta coefficients by sex and age for the coping resources regressed on seeking social support

Variable	<u>Men</u>		<u>Women</u>		<u>Young</u>		<u>Old</u>	
	<u>Beta</u>	<u>Sig.</u>	<u>Beta</u>	<u>Sig.</u>	<u>Beta</u>	<u>Sig.</u>	<u>Beta</u>	<u>Sig.</u>
Stress	.20	.06	.26	.00	.19	.02	.21	.07
Age	-.08	.49	-.17	.07	-.15	.08	.13	.30
Educat	-.22	.09	-.01	.89	.05	.58	-.21	.10
Occption	.23	.05	.09	.33	.02	.84	.17	.15
MarStat	.12	.28	-.09	.32	.04	.62	-.02	.83
Integrat	-.06	.60	-.01	.89	.02	.77	-.07	.54
Religious	-.11	.33	.08	.34	.07	.39	-.00	.96
Support	.14	.19	-.01	.88	.17	.04	.02	.86
R ²	.13		.09		.10		.18	

while the stress effect was positive, indicating that higher stress increased the older respondents' reported use of seeking social support, the effect of education was negative, indicating that higher education decreased the use of seeking social support.

The adjusted R^2 's for the regression models used to explain coping strategies were all very weak. For men, the adjusted R^2 's were 0.01 for problem-focused coping, -0.01 for cognitive displacement, and 0.04 for seeking social support. For women, these adjusted R^2 's were 0.11, -0.00, and 0.04 respectively. For the young, the adjusted R^2 's were 0.09 for problem-focused coping, 0.04 for cognitive displacement and 0.05 for seeking social support, while for older respondents they were -0.06, 0.04 and 0.09 respectively. In general, the positive relationships between stress and the three coping strategies across both sex and age groups would indicate that these strategies do serve as stress mediators in that they are called upon during times of high life change stress in an effort to cope with stress.

CHAPTER VI. DISCUSSION

While there were no sex differences in life change stress levels or self-ratings of health, life change stress did have a detrimental effect on the self-rated health of the women that approached statistical significance in the direct effects model. Levels of life change stress also did not vary by age grouping, but self-ratings of health did--older people rated their health worse than younger people. In addition, the older respondents' self-rated health was detrimentally affected by their reported level of stress, though the effect only approached statistical significance in the direct effects model. Stress had no effect on the self-rated health of men and younger respondents. Because stress had no appreciable effect on the self-rated health of men or younger respondents, these results indicate that women and older persons were more sensitive to detrimental stress effects.

Previous research has indicated that women of all ages perceive greater amounts of change from life events, have lower life satisfaction when facing life changes, and are more physiologically responsive to stressful situations (Bourque and Back, 1977; Ekehammar, 1974; Lieberman, 1978; Simons and West, 1983). Though older individuals have been found to rate life events as less stressful and to be less

responsive to stress, the elderly may experience a loss in their capacities to deal with stress, making them more vulnerable to negative stress effects (Eisdorfer and Wilkie, 1977). These differences in sensitivity to stress may also be due to a greater ability on the part of men and younger people to adapt to life change stress. Life change stress may not be as 'stressful' for men and younger people because they may more readily adapt or cope. Life change stress, then, would not be expected to cause detrimental effects on their self-health ratings.

Other factors besides stress must explain the variance in self-rated health among men. These other variables may not be social, psychological or behavioral, but may be purely physical. In this study, age had the only significant main effect on self-rated health among the men, and perhaps age was significant because of its association with actual physical health. Men (and younger respondents) may conceive of health only in terms of their physical functioning, while women and older persons may have a broader conception of health that includes mental well-being. Another indication that other variables must be associated with self-rated health among men is the inability of the nine predicted coping resources and strategies to explain a significant amount of the variance in the men's health ratings.

When comparing across both sex and age groups, age had the most consistently significant main effect on self-rated health; however, among the younger respondents, age merely approached statistical significance. As anticipated, older age was associated with worse ratings of health in each sex and age category. This is most likely due to the biological tendency for increasing symptoms of disease and decreasing physical functioning with age (Graney and Zimmerman, 1981; LaRue, et al., 1979; Sackett, et al., 1977).

When entered as a single step after controlling for direct effects, the interaction effect of education approached statistical significance among the men (Beta = $-.56$, T-sig. $.10$), but did not have the anticipated stress buffering effect on their self-rated health. In fact, education increased poor ratings of health when men were under high life change stress. Higher education may increase men's expectation that they can resolve life change stress by using logic and reasoning when in fact many life change stressors are not amenable to logic. Also, highly educated men may simply expect more of themselves, thinking that they should be able to handle the stressful situation more effectively. Education had no significant direct or interaction effects among the women and younger and older respondents indicating that education had virtually no effect on their self-rated health.

Occupation had beneficial direct effects on self-rated health among the women and younger respondents both before and after the stress interaction terms were added to the model, but had no significant effect among the men and younger respondents. In part, this tends to confirm previous research on the beneficial main effects of occupational status (Brown and Harris, 1978; Kessler, Price, and Wortman, 1984; Menaghan, 1984; Sherwood et al., 1974; Simons and West, 1984; Wheaton, 1980); still, it is surprising that occupation had no effect on the self-rated health of men and older respondents. Since the men reported higher occupational status jobs than the women, the greater demands of their higher status jobs may have nullified any significant effect from high occupational status. Many of the oldest respondents may have been retired, which also might cancel the effects of occupational status on their self-rated health. When in interaction with high life change stress, occupational status was insignificant across each sex and age group indicating it did not serve as a buffer against high life change stress.

Religiosity had a significant beneficial direct effect on self-rated health among the older respondents until the stress interaction terms were added to the model. The drop in significance may have been the result of multicollinearity. This beneficial direct effect agrees with previous

research on the benefits of religiosity (Gubrium, 1973; Heyman and Gianturco, 1973; Moberg, 1965, 1972, 1974; Silver et al., 1983); however, religiosity was expected to be beneficial across sex and age groups. Religious convictions were significantly stronger among the older respondents than among the younger respondents, and, strong religious convictions might have a greater effect on self-rated health. This study and previous studies (Orbach, 1961; Payne and Whittington, 1976; Petrowsky, 1976) have also found that women are significantly more religious than men; yet, religiosity had no effect on self-rated health for either sex. Religiosity, therefore, may simply be more beneficial to older people. Religiosity was also expected to have beneficial stress buffering effects. However, in interaction with high life change stress, religiosity had no significant effect on self-rated health for any of the sex and age categories.

Four variables were used in this study to assess the effects of social networks on stress and coping. They included the objective presence of a spouse, the subjective presence of social supports, feelings of social integration, and the seeking of social support as a means to deal with stress. Surprisingly, none of these social network variables had statistically significant direct or interaction

effects on self-rated for men, women, or younger or older respondents.

In previous studies, men have reported lower levels of social network affiliation in terms of quality or intensity and they appear to make less use of social networks when dealing with stress (Burke and Weir, 1979; Funabiki et al., 1980; Ilfeld, 1980; Kleinke, Staneski, and Mason, 1982; Padesky and Hammen, 1981; Rippere, 1976). The current study tends to confirm this prior research since men did report significantly less felt support than did the women and men also tended to report less use of seeking others as a coping strategy. Therefore, social networks may basically be inconsequential for men since social integration, preceived social support and the coping strategy of seeking others did not have significant direct or interaction effects on their self-rated health.

Contrary to almost all previous research on the benefits of the spousal relationship for men (Bernard, 1971; Lopata, 1973; Meyers, Lindenthal, and Pepper, 1975; Powers and Bultena, 1976; Vanfossen, 1981), marital status had insignificant direct and interaction effects on men's self-rated health in the current study. The insignificant main and stress interaction effects are difficult to explain, and perhaps are simply the result of sampling error.

None of the social network variables had statistically significant direct or stress interaction effects among the older respondents, and, the seeking of social support as a strategy to cope with stress had insignificant direct and stress interaction effects on ratings of health for each sex and age category. Before the stress interaction terms were added to the model, the presence of a spouse among the younger respondents and feelings of social integration among the women each approached statistical significance as direct effects. Presence of a spouse was detrimental for the self-rated health of the younger respondents, while social integration was beneficial for the self-rated health of the women. The remaining direct effects from the social network variables were insignificant among the women and younger respondents, but the stress interaction effect of social support approached statistical significance among the young (Beta = $-.16$, T-sig. $.12$) when entered as a single step after controlling for the direct effects. Its interaction effect, unfortunately, was detrimental.

This study concurs with previous studies that have found that women have more intense social support relationships and extend their support to a wider range of people than men (Belle, 1982; Kessler et al., 1984). Since the majority of prior research on social support has also found it to have beneficial stress interaction or buffering

effects, especially among women (Kessler and McLeod, 1984; Lin, 1986; Silver and Wortman, 1980), its insignificant direct and interaction effects among the women and its insignificant direct and detrimental stress interaction effects on the young are somewhat puzzling.

Some researchers have hypothesized that broad and intense support networks may actually create stress and demands that can lead to impairment (Tucker, 1982; Wortman and Lehman, 1984). The presence of strong social supports may actually consume an individual's attention and energy, thereby producing detrimental effects on self-rated health when under high life change stress. If this were true among the younger respondents who have qualitatively rich social support relationships, then they would be expected to rate their health poorly and this would account for the tendency of social support to have detrimental stress interaction effects among younger respondents.

Younger people may also inappropriately use their social supports to focus on their emotional reactions to stressors thereby increasing their level of stress or the types of stressors that younger respondents face may be less amenable to the effects of social supports (Billings and Moos, 1984; Folkman and Lazarus, 1980). In a similar vein, the types of stressors that men, women and older respondents

face may also be unaffected by the presence of social supports.

As previously noted, the direct effect of marital status approached statistical significance only on the self-rated health of younger respondents, and unfortunately its effect was detrimental. Marital status had no significant stress interaction effects. Some studies have found that marital status is a source of stress for women and that presence of a spouse has negative stress interaction effects on their health (Chiriboga and Dean, 1978; Simons and West, 1983). Perhaps among the younger respondents, marital status was also a significant source of stress. Young couples may not be as comfortably established as older couples, which might explain marital status' detrimental main effect on the self-rated health of younger respondents.

As expected, the women reported significantly greater use of seeking social support as a coping strategy than men. This finding supports prior research on sex differences in coping strategies (Burke and Weir, 1979; Funabiki et al., 1980; Ilfeld, 1980; Kleinke, Staneski, and Mason, 1982; Padesky and Hammen, 1981; Rippere, 1976). However, seeking social support had insignificant direct and stress interaction effects on self-rated health across sex and age groups. This would indicate that social support could be a basically neutral coping strategy.

Problem-focused coping had consistently detrimental direct effects on the self-rated health of women and older respondents. Its effects were significant in the initial regression model and continued to approach statistical significance after the stress interaction terms were added to the model. None of the stress/problem-focused coping interaction effects approached statistical significance.

The detrimental main and stress interaction effects of problem-focused coping on women may have been due to the fact that problem-focused coping is uncharacteristic of the female sex role (Bell, 1981). Though the present study found no significant sex differences in the reported use of problem-focused coping, prior studies have found that women use less problem-focused coping than men (Burke and Weir, 1979; Funabiki et al., 1980; Ilfeld, 1980; Kleinke, Staneski, and Mason, 1982; Padesky and Hammen, 1981; Rippere, 1976). This study and previous studies have also found that younger people are less likely to use problem-focused coping strategies than older people (Billings and Moos, 1984; Ilfeld, 1980; McCrae, 1982). Women and younger respondents may be less skilled at using problem-focused coping than were the men and older respondents.

Problem-focused coping may also be subjectively different for women and younger respondents than it is for men and older respondents. For example, focusing on their stress

may cause women and younger respondents to become more emotionally upset, thereby repressing positive health ratings. For men and older respondents, problem-focused coping may lead to more rational approaches to stress. Previous studies have found women's coping strategies to be less effective than men's (Billings and Moos, 1981; Pearlin and Schooler, 1978). Women and younger people may also experience a disproportionate amount of stressors which are not amenable to problem-focused coping (Folkman and Lazarus, 1980; Gove, 1978), making this strategy not only ineffective for them, but also frustrating.

Since older respondents reported using less problem-focused coping than younger respondents, the tendency for problem-focused coping strategies to have detrimental main effects and insignificant interaction effects among the older respondents is curious. Perhaps older people who focus on their day-to-day problems feel helpless and defeated if those problems have no immediate solutions. Focusing on their daily problems may also cause older people to become upset over even relatively minor events. In contrast, when older people are experiencing an unusually high amount of life change stress, focusing on their problems may do little to affect their self-rated health. Finally, it has also been suggested that older people experience a disproportionate amount of stressors which are not amenable

to problem-focused coping, such as death of spouse or failing health (Folkman and Lazarus, 1980; McCrae, 1982; Simons and West, 1984); therefore, its detrimental main effect may have been expected.

For men and younger respondents, the direct effects of cognitive displacement on their self-rated health were insignificant. The types of daily stressors that men and younger respondents face (i.e., more work-related) (Folkman and Lazarus, 1980) may not be amenable to cognitive displacement. Instead their stressors may require more immediate active solutions, and cognitive displacement may tend to delay efforts to deal directly with their problems.

Cognitive displacement had consistently beneficial direct effects among women and older respondents. The beneficial direct effect of cognitive displacement was statistically significant among the women and approached significance among the older respondents until the stress interaction terms were added to the model. It could be that women and older respondents use cognitive displacement to take their minds off their health problems as well as other stressors in their lives, and hence rate their health more positively. Then again, the types of daily stressors that women and older respondents face may yield readily to the use of cognitive displacement until they are facing a high degree of life change stress. For example, women and older

people appear to face more life change stressors from their social networks and health (Folkman and Lazarus, 1980), and these types of stressors may not require or even have immediate direct action solutions. The use of cognitive displacement then may be a viable strategy to cope.

Women and older people have also been found to use more indirect coping strategies when dealing with stress (Burke and Weir, 1979; Funabiki et al., 1980; Ilfeld, 1980; Kleinke, Staneski, and Mason, 1982; McCrae, 1982; Padesky and Hammen, 1981; Rippere, 1976), but men and younger people may be more adept at using cognitive displacement than women and older people. For example, cognitive displacement may mean idealized fantasies of dealing with stress for women and the young, while, for men and older people, it may mean a momentary escape from or a focus on the positive side of their stressors. Perhaps idealized fantasies do nothing for the objective reality of stress except to delay efforts to deal with it, in which case stress effects may become detrimental.

As expected, respondents who reported greater life change stress also reported greater use of each of the three coping strategies examined in this study. This appears to confirm a stress mediating effect for coping strategies. The positive relationship between stress and the three coping strategies was consistent across sex and age groups with

only one exception--for men, greater levels of stress tended to repress the use of cognitive displacement. Though its effect was insignificant, male gender role training may influence men to use less cognitive displacement when under stress in favor of other more direct coping strategies.

Stress had particularly strong positive effects on the coping strategy of seeking social support. Its effect was statistically significant for both women and younger respondents and approached statistical significance among men and the older age group. When under high life change stress, everyone, regardless of sex or age, must have felt a fairly strong urge to seek the support and comfort of their friends and family. Seeking social support, however, did not have significant direct or interaction effects on self-rated health.

For the young, stress significantly promoted their use of problem-focused coping. Again, the type of life change stressors that younger respondents face could bias them toward the use of problem-focused coping when under stress. Unfortunately, the use of problem-focused coping had insignificant effects on their self-rated health in times of high life change stress. Among the women, stress appeared to increase the use of cognitive displacement, but its effect only approached statistical significance. Cognitive displacement had an insignificant effect on women's self-rated

health when they were experiencing high life change stress; therefore, this is also an unfortunate finding.

As with higher levels of stress, higher occupational status and greater presence of social supports consistently increased the use of each coping strategy with only three exceptions. The exceptions were that presence of social supports repressed the use of cognitive displacement among the women and older respondents, and, also repressed the use of seeking others among the women. The only statistically significant effects from occupation and social support were the positive effect of occupational status on the seeking of social support among women and the positive effect of social support on the seeking of others among the younger respondents. Feelings of social integration had very mixed insignificant effects on the three coping strategies.

In general, people with higher occupational status and more social supports used a greater amount of each coping strategy, while those of lower occupational status or with fewer social supports did not. These findings are in agreement with previous research findings on the greater ability of higher occupational status individuals to cope with stress (Brown and Harris, 1978; Westbrook, 1979; Wheaton, 1980), and they support the argument that social support may increase the number of perceived options for

coping with a stressful situation since the use of all three strategies increased when social supports were present.

In contrast to occupational status and social support, marital status had consistently repressive effects on the use of all three coping strategies with only two exceptions. Perhaps persons who were married turned to their spouse when coping with stress rather than using problem-focused coping, cognitive displacement, or seeking others. The use of cognitive displacement was most strongly affected by the presence of a spouse, especially among the young and to some extent among the older age group. A spouse could possibly prevent the use of cognitive displacement by encouraging their mate to focus on the stress rather than use cognitive displacement.

Religiosity and education both tended to increase the use of cognitive displacement and decrease the use of problem-focused coping, except higher education increased the use of problem-focused coping among men. Most of these effects, however, were statistically insignificant. Since religiosity might encourage positive thinking as a strategy for coping with stress (Silver et al., 1983), its positive relationship with cognitive displacement and negative relationship with problem-focused coping could be expected. The positive effect of education on the use of cognitive displacement is somewhat curious since its effect approached

significance for both the men and older respondents. Since many, if not most, life event stressors do not have algebraic solutions, higher education may not actually encourage the use of problem-focused coping, but rather improves perceptions of alternative ways to cope with stress, including cognitive displacement.

Education had basically detrimental effects on seeking others among both sexes and the older respondents. Since the negative effect of education on seeking social support approached statistical significance for the men and older respondents, perhaps the highly educated men and older respondents felt basically independent, as if they could cope with stress without the help of others; however, the educated younger respondents may not yet feel as secure about their ability to handle stress on their own.

Age appears to discourage the use of both problem-focused coping and coping by seeking social support. This was especially true among the women and younger respondents since the negative effects of age on problem-focused coping were statistically significant and the negative effects of age on seeking social support approached statistical significance. The repressive effects of age on problem-focused coping may actually be beneficial for women and younger respondents since the use of problem-focused coping was

detrimental to their self-rated health. Age had no significant effect on the use of cognitive displacement.

In essence, this study did find differences by sex and by age in which, if any, of the proposed coping resources and strategies were beneficial for self-rated health. The self-rated health of women had both more varied and more statistically significant variables that were able to partially explain their health ratings, while for men, the determinants of their health ratings remained elusive. The explanation of the variance in self-rated health among both age groups was also less than satisfactory and revealed that different coping resources and strategies may be beneficial for younger versus older respondents. The coping resources also did not appear to be very predictive of what coping strategies the respondents espoused. Therefore, this study does little to clarify if or how coping resources buffer stress, but does lend some support for a stress mediating effect from the coping strategies.

Cognitive interactionist theory was somewhat useful in predicting the effects of many of the coping resources and strategies on self-rated health and in predicting the effects of the various coping resources on the three coping strategies. Since cognitive interactionist theory is concerned about perceptions, further clarification of how men versus women and younger people versus older people perceive

the various coping resources and strategies would doubtless-ly improve the ability of cognitive interactionist theory to adequately predict the relationships between stress, resources, strategies and health outcomes. Men and women and younger and older people may each have different perceptions of and extract different effects from the various resources and strategies. Religiosity, for example, may be perceived as an internal belief system among men and older people, and as a social support network among women and younger people. As such, religiosity may influence men to keep their stressors to themselves, while it may cause women to share their stressors with fellow believers.

Implications

Any discussion of the implications of this study must be tempered by consideration of both real and potential methodological limitations. First, the sampling population lived in or immediately surrounding a rural, midwestern village which places definite limits on the possible generalizability of the results. The midwest is typically a fairly conservative area; therefore, the results presented here might differ if the study were repeated on either the east or west coast. In addition, the village was much smaller than the majority of midwestern rural communities and the data were gathered just as the farm crisis was

reaching the area. This means that the results might not hold true during a more stable time period or for larger, rural, midwestern samples.

A second consideration concerns the response rate of those originally sampled. Of the 400 households randomly sampled from the area's total population, only 285 were successfully contacted to complete a telephone interview and there was an over-sampling of married respondents. It is unknown whether responses from the 115 who either refused to participate, failed to answer their phone, or had non-working phone numbers would have seriously altered these findings. Lastly, the loss of respondents due to the list-wise deletion of missing data may have further biased the sample used in the final analyses. The respondents who failed to answer some of the questions used in this study were significantly older and had lower educational levels than those who faithfully answered them all.

Since this study examined a relatively large number of variables, the simple random chance that any one variable would be significantly related to self-rated health was increased. Multicollinearity is yet another limitation on the findings regarding the stress buffering effects of the coping resources and strategies. Unfortunately, researchers are, as yet, unsure how to deal appropriately with the problems associated with multicollinearity (Lin, 1986). Finally,

there may be serious measurement problems in the operationalization of the variables. For instance, the number of life event stressors was limited to only 22 items and self-rated health may not have measured the same concept among the different sex and age groups.

Since these data were collected from a small rural community that was beginning to feel the effects of a recession in the farm economy, the implications from this research might be most applicable for people living in rural communities that are experiencing the farm crisis of the 1980s. There is some evidence that both stressors and coping resources and strategies may be unique in rural farm areas, and especially among farm families (Rosenblatt and Anderson, 1981).

Given that in this study and in previous studies women and older people were potentially more responsive to life change stress, doctors, counselors, family and friends, and others who are significant in the lives of women and older people should be more concerned about the stressful events which occur in the lives of women and older people. Stressful events may alter their perceptions of their health condition, which in turn may affect their attitudes and behaviors (Graney and Zimmerman, 1981). In times of high life change stress, significant others should perhaps encourage women and older individuals to seek preventative

health care measures as protection against the potential negative effects of high life change stress.

In addition, significant others might attempt to bolster the coping resources or strategies that have potentially beneficial relationships with health ratings and to discourage those that do not. This study would suggest that women benefit from higher occupational status, greater feelings of social integration, and the use cognitive displacement, but that the use of problem-focused coping may be detrimental for their self-rated health. Though changes in occupational status are not easily accomplished, there may be ways to heighten feelings of social integration and to encourage the use of cognitive displacement. Likewise, there may be ways to discourage the use of problem-focused coping. This study offers little advice for those who would wish to improve self-rated health among men. It does suggest, however, that in interaction with high life change stress, education may have detrimental effects on men's self-rated health. If so, significant others should be somewhat concerned about the self-rated health of men who have higher levels of education.

As for women, older people should also be urged to use more cognitive displacement and less problem-focused coping. In addition, high religiosity had beneficial effects on the self-rated health of the older respondents, indicating that

strong religious beliefs and practices might be encouraged. Occupational status had the only significant beneficial effect on younger respondents' self-rated health, and, as noted before, changes in occupational status may not always be readily accomplished. This study also suggests that when younger people are under high life change stress, qualitatively rich social support networks may not be beneficial for their self-rated health. Therefore, when counseling a younger person who has experienced a number of recent life changes, it may be important to examine the quality of their social network.

Suggestions for Future Research

This research has been one of the first studies of its kind, and, as previously indicated, there are obvious limitations to generalizing its results to the population at large. Similar research should be conducted using different samples from different geographical areas. Perhaps women and older people in other areas or cultures are less responsive to life change stress than the women and older people in this study. If so, the resources and strategies which would be beneficial for them may be quite different than those found in this study. Since this study and others have indicated that the coping process is different for younger and older people, future research should continue to examine

age as well as sex differences when exploring the coping process. Longitudinal research is needed to separate the effects that coping resources and strategies have on health outcomes from the effects that health might have on coping resources and strategies. When does the presence of social support aid in reducing negative health changes and when do negative health changes precipitate the loss of social support relationships?

It is surprising that social support and the seeking of social support as a coping strategy had virtually no significant effects on self-rated health in this study since in previous studies social resource variables were significantly related to health. Many of these studies did not explore sex or age differences in the relationship between social resources and health and many have used questionable measures of social resources and strategies. Future research needs to continue to explore when social resources, such as social support and the use of social coping strategies, are important in the coping process and when they are not.

The beneficial effect of religiosity on self-rated health was significant only among the older respondents and high occupational status was significant only among women and younger respondents. More detailed studies of these variables are warranted to determine why they were not significant for both sexes and both age groups. How do

religiosity and higher occupational status effect self-rated health? Greater religiosity may allow individuals to attribute positive meaning to the stressful situations they encounter and higher occupational status may allow individuals greater monetary latitude in seeking remedies for their stressful situations.

Problem-focused coping had significant detrimental direct effects on the self-rated health of both women and older respondents, and coping by cognitive displacement had significant beneficial effects on the self-rated health of women and older respondents. It has been suggested that since many of the life events experienced in older age are negative and uncontrollable, older people need more passive coping strategies to deal with these events rather than active problem-focused coping. This might also hold true for women. Cognitive displacement is somewhat of a passive coping strategy and may help women and older people to accept the negative and focus on the positive things in their lives. Why and how these two strategies affect the self-rated health of women and older people needs much more research.

Differences by sex in the significance of using problem-focused coping versus cognitive displacement might be accounted for by gender roles in our culture. Men are expected to take an active problem-focused coping stance due

to their sex role and may feel rewarded when they do take such a stance regardless of the outcome. Women are not expected to take such a stance and may feel it is inappropriate when they take a problem-focused approach to their stressors. In addition, women who do take a problem-focused approach to stress may also be increasing their negative responses to it simply by focusing on the stress. This seems plausible since women under high life change stress do rate their health as being worse than do women who are not under high stress. In contrast, women's gender roles would suggest that they would use more cognitive displacement when dealing with stress and perhaps feel rewarded when they do so. Older respondents, too, may feel greater rewards when using cognitive displacement given that it is a more passive strategy and would reduce the tensions associated with the negative, uncontrollable life change events they are usually facing. These effects need greater theoretical and empirical clarification.

Continuing research on the effects of life change stress and various potential coping resources and strategies could eventually yield specific models that would explain a substantial amount of the variation in self-rated health and actual health--especially among women and older individuals. The benefits of such models are far reaching for the prediction of who will or will not suffer from physical or mental

health problems during times of high life change stress and for the possibility of intervening in the relationship between life change stress and negative health outcomes. It is important that doctors, counselors, and family and friends begin to understand not only which resources and strategies are the most beneficial and which could in fact be detrimental, but also to understand how resources and strategies are able to affect health.

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APPENDIX A: OPERATIONALIZATION OF VARIABLES

Life Change Stress

I am going to read a list of events that sometimes happen to people. As I read each event, please tell me whether you experienced it during the last year.

CHECK EACH ITEM CITED AND ASK:

How many times did you experience _____ in the last year?

- (1) Once
- (2) Twice
- (3) Three or more times

- a. Death of a child or spouse (husband or wife) (67)
- b. Death of a parent, brother or sister (51)
- c. Loss of a close friend or important relationship by death (36)
- d. Financial difficulties (26)
- e. Divorce (45)
- f. Separation from spouse because of marital problems (41)
- g. Court appearance for a serious violation (23)
- h. Being fired or laid off (27)
- i. Hospitalization of a close family member for a serious illness (26)
- j. Unemployment for more than one month (if regularly employed) (20)
- k. Involvement in a lawsuit (other than divorce) (23)
- l. Breaking a marital engagement (27)
- m. Arguments with spouse (26)
- n. Troubles with boss or other workers (10)
- o. Separation from a close friend (24)
- p. A big change in work or school (16)
- q. A move to another town, city or state (20)
- r. Getting married or returning to spouse after a separation (34)
- s. Minor violations of the law (7)
- t. Change of residence within the local area (7)
- u. The birth or adoption of a child (26)
- v. Victim of a crime (42)

$\bar{X} = 71.15$

S.D. = 67.03

Median = 52.00

Social Support

Now I would like to ask you a few questions about persons other than those that live in your home with you.

- A. Are there any persons, either friends or relatives that don't live with you, that you feel close to?
- B. Of these close people, are there any that you feel very close to, that are somehow special or very important to you?

Now I would like you to think of the 3 persons from this group who are the most important, or closest, to you. I am going to ask you a few questions about each of these people.

1. If you had some personal problem that was bothering you, how comfortable would you feel discussing the problem with _____? Would you say you would be very comfortable, somewhat comfortable, somewhat uncomfortable, or very uncomfortable?
2. If you needed some type of help or assistance, such as caring for you when you're ill, or helping you with a financial problem, how comfortable would you feel asking _____ for help? Would you feel very comfortable, somewhat comfortable, somewhat uncomfortable, or very uncomfortable?

Coded: (0) No close friend
(1) Very uncomfortable
(2) Somewhat uncomfortable
(3) Somewhat comfortable
(4) Very comfortable

\bar{X} = 18.36
S.D. = 6.45
Median = 21.00
Alpha = 0.91

Social Integration

Now I am going to read you some statements that people sometimes make. I would like you to tell me whether you agree, disagree, or neither agree nor disagree.

Factor Loading

A. People don't really care what happens to the next person.	0.8019
B. These days I get the feeling that I'm just not a part of things.	0.4963
C. These days I don't know who I can depend on.	0.7710

Coded: (1) Agree
 (2) Neither agree nor disagree
 (3) Disagree

\bar{X} = 7.82
 S.D. = 1.60
 Median = 9.00
 Alpha = 0.51

Coping Strategies

We are interested in how people in communities like yours attempt to cope with stressful events like financial problems, a serious illness, having to move, and the like. How often do you engage in each of the following activities when you are under a lot of stress?

Coded: (1) Seldom
(2) Sometimes
(3) Often

Problem-focused coping

1. I try to take the bull by the horns and do something to change things.
2. I try to recall how I have dealt with similar situations in the past.
3. I try to figure out what would happen in the future if I behaved one way, and what would happen if I behaved another way.
4. I try to determine how other people have dealt with this type of problem.

$\bar{X} = 8.66$
S.D. = 2.11
Median = 9.00
Alpha = 0.64

Coping by cognitive displacement

1. I turn to work or some other activity to take my mind off things.
2. I tell myself positive things or think about the good things that have happened to me in my life as a way of developing a better perspective.

$\bar{X} = 4.62$
S.D. = 1.08
Median = 5.00
Alpha = 0.34

Coping by seeking social support

1. I seek out the sympathy and understanding of others.
2. I talk things over with a friend or someone I respect to see what they would do.

$\bar{X} = 4.23$

S.D. = 1.28

Median = 4.00

Alpha = 0.47

APPENDIX B: ANALYSIS OF MISSING RESPONDENTS

Table 12. Differences between respondents included in the correlation and regression analyses and those excluded by listwise deletion of missing data

Variable	Chi-Square	D.F.	Significance	Gamma
Self-health	2.91	1	0.09	0.28
Stress	0.81	1	0.37	-0.17
Age	29.76	1	0.00	0.74
Sex	0.43	1	0.51	-0.12
Education	7.05	1	0.01	-0.44
Occupation	0.07	1	0.78	-0.08
Marital Status	2.29	1	0.13	-0.27
Integration	0.02	1	0.88	-0.05
Religiosity	0.08	1	0.78	-0.07
Felt Support	0.39	1	0.53	-0.13
Problem Focus	2.73	1	0.10	-0.31
Cog. Displacement	0.65	1	0.42	-0.16
Seek Others	0.10	1	0.76	-0.08

APPENDIX C: STRESS INTERACTION CORRELATIONS

Table 13. Zero-order correlation coefficients between stress and the stress interaction terms

	<u>Stress</u>	<u>SEducat</u>	<u>SOccupat</u>	<u>SMarried</u>	<u>SIntegra</u>
SEducat	.93*	1.00			
SOccupat	.66*	.64*	1.00		
SMarried	.89*	.85*	.57*	1.00	
SIntegra	.90*	.88*	.57*	.77*	1.00
SReligio	.71*	.63*	.46*	.74*	.63*
SSupport	.27*	.21*	.16*	.20*	.31*
SCpPrblm	.92*	.87*	.61*	.82*	.82*
SCpDsplc	.93*	.91*	.60*	.83*	.87*
SCpOther	.86*	.76*	.50*	.78*	.76*

*Significant at ≤ 0.01 level.

Table 12. (continued)

	<u>SReligio</u>	<u>SSupport</u>	<u>SCpPrblm</u>	<u>SCpDsp1c</u>	<u>SCpOther</u>
<hr/>					
SEducat					
SOccupat					
SMarried					
SIntegra					
SReligio	1.00				
SSupport	.18*	1.00			
SCpPrblm	.60*	.26*	1.00		
SCpDsp1c	.67*	.27*	.89*	1.00	
SCpOther	.56*	.32*	.83*	.78*	1.00
